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Part I   Conference Schedule

Time: January 5- 7, 2018
Location: Arnoma Grand Bangkok (曼谷阿诺玛酒店)

Date	Time	Lobby		
Jan. 5	14:00-17:00	Registration		
Date	**Time**	**Thip-Ubol**	**Subongkot**	**Pathummas**
Jan. 6	08:00-12:00	**Computer Science & Communications: Invited Session 1** **Chair: Prof. Jixin Ma** **Group photo & Coffee Break: 10:00-10:20**	**Computer Science & Communications: Invited Session 2** **Chair: Prof. Peter W. TSE** **Group photo & Coffee Break: 10:00-10:20**	**Medicine & Healthcare: Invited &Technical Session 1** **Chair: Dr. Hyun-Duck Kim** **Group photo & Coffee Break: 10:00-10:20**
	12:00-13:30	Lunch [Mango 99, Lobby floor, Arnoma Grand Bangkok]		
	Time	**Thip-Ubol**	**Subongkot**	**Pathummas**
	14:00-18:00	**Computer Science & Communications: Invited &Technical Session 1** **Chair: Prof. Farzad Mashayek** **Group photo & Coffee Break: 16:00-16:20**	**Computer Science & Communications: Technical Session 2** **Chair: TBD** **Group photo & Coffee Break: 16:00-16:20**	**Medicine & Healthcare: Invited &Technical Session 2** **Chair: Dr. Manjubala Dash** **Group photo & Coffee Break: 16:00-16:20**
	18:00-19:30	Dinner [Mango 99, Lobby floor, Arnoma Grand Bangkok]		
Date	**Time**	**Thip-Ubol**	**Subongkot**	**Pathummas**
Jan. 7	08:00-12:00	**Computer Science & Communications: Invited &Technical Session 3** **Chair: Prof. Miran Mozetič** **Group photo & Coffee Break: 10:00-10:20**	**Medicine & Healthcare: Invited &Technical Session 3** **Chair: Prof. Bernard M Y Cheung** **Group photo & Coffee Break: 10:00-10:20**	**Medicine & Healthcare: Invited &Technical Session 4** **Chair: Prof. Keith R Pennypacker** **Group photo & Coffee Break: 10:00-10:20**
	12:00-13:30	Lunch [Mango 99, Lobby floor, Arnoma Grand Bangkok]		

Part II　Invited Sessions

Computer Science & Communications: Invited Session 1

Invited Speech 1: Novel Techniques for Sentiment Analysis and Opinion Mining

Speaker: Dr. Alexander Gelbukh, Mexican Academy of Sciences, Mexico
Time: 08:00-08:30, Saturday Morning, January 6, 2018
Location: Thip-Ubol, 3rd Floor, Arnoma Grand Bangkok

Abstract
Opinion mining is a rapidly growing research area that aims on leveraging the huge amount of user-contributed contents in Internet for collecting data, opinions, and suggestions on the quality of as many of products and services as possible, ideally on almost every product or service on the market. In the context of business intelligence and decision-making support systems, this information is used by companies to improve their products, to develop new products, to distribute their products by market niches, and to improve targeted advertising campaigns according to the preferences of different user groups. In the context of recommender systems, this information is used by the consumers to find better and more suitable products, with which other users with similar needs and preferences have had positive experience, and thus to make more informed purchasing decisions. Indirectly, through a "natural selection" mechanism, this also leads to improvement in the average quality of products and services available in the market: bad products have less chance to be sold, and companies that cannot improve their products exit the market. Technically, opinion mining includes, as the most important steps, sentiment analysis (to find whether a review or social network post expresses positive or negative opinion about the product), author profiling (to determine the characteristics of the author of the opinion, such as psychological type), and deception detection (to filter out fake opinions). In this keynote talk, I will describe the technique our group has developed as contribution to these important tasks. In particular, I will present deep-learning architectures we have developed for these tasks.

Invited Speech 2: On the Role of Metamodeling in Software Engineering

Speaker: Dr. Fernando Brito e Abreu, University Institute of Lisbon, Portugal
Time: 08:30-09:00, Saturday Morning, January 6, 2018
Location: Thip-Ubol, 3rd Floor, Arnoma Grand Bangkok

Abstract
Metamodeling techniques have played a major role in the last two decades in setting up the foundations for the systematic, disciplined and quantifiable approaches that are required in developing, operating and maintaining software

systems, in other words, in what our community decided to call "Software Engineering".

This talk will present an insider's view on the application of metamodeling techniques in several knowledge areas of the Software Engineering Body of Knowledge (SWEBOK), where Fernando's QUASAR research group has developed pioneering work. He will review and discuss the relevance of the application of metamodel-based techniques in the ten major SWEBOK knowledge areas (Software Requirements, Software Design, Software Construction, Software Testing, Software Maintenance, Software Configuration Management, Software Engineering Management, Software Engineering Process, Software Engineering Models and Methods, Software Quality).

Last, but not the least, Fernando will present his view on the role of metamodel-based techniques in the future of Software Engineering.

Invited Speech 3: Implementation of Sub optimal Genetic algorithm for pattern recalling from Hopfield neural networks

Speaker: Prof. Manu Pratap Singh, Dr. B. R. Ambedkar University, India
Time: 09:00-09:30, Saturday Morning, January 6, 2018
Location: Thip-Ubol, 3rd Floor, Arnoma Grand Bangkok

Abstract
Hopfield proposed a fully connected neural network model of associative memory in which we can store information by distributing it among neurons, and recall it from the dynamically relaxed neuron states. If we map these states corresponding to certain desired memory vectors, then the time evolution of dynamics leads to a stable state. These stable states of the networks represent the stored patterns. Hopfield used the Hebbian learning rule to prescribe the weight matrix for establishing these stable states. A major drawback of this type of neural networks is that the memory attractors are constantly accompanied with a huge number of spurious memory attractors so that the network dynamics is very likely to be trapped in these attractors, and thereby prevents the retrieval of the memory attractors. Hopfield type networks also likely are trapped in non-optimal local minima close to the starting point, which is not desired. The presence of false minima will increase the probability of error in recall of the stored pattern. The problem of false minima can be reduced by adopting the evolutionary algorithm to accomplish the search for global minima. There have been a lot of researchers who apply evolutionary techniques (simulated annealing and Genetic algorithm) to minimize the problem of false minima. Imades& Akira have applied evolutionary computation to Hopfield neural networks in various ways. A rigorous treatment of the capacity of the Hopfield associative memory can be found in. The Genetic algorithm has been identified as one of prominent search technique for exploring the global minima in Hopfield neural network. Developed by Holland, a Genetic algorithm is a biologically inspired search technique. In simple terms, the technique involves generating a random initial population of individuals, each of which represents a potential solution to a problem. Each member of this population evaluates from a fitness function which is selected against some known

criteria. The selected members of the population from the fitness function are used to generate the new population as the members of the population are then selected for reproduction based potential solutions from the operations of the genetic algorithm. The process of evaluation, selection, and recombination is iterated until the population converges to an acceptable optimal solution. Genetic algorithms (GAs) require only fitness information, not gradient information or other internal knowledge of a problem as in case of neural networks. Genetic algorithms have traditionally been used in optimization but, with a few enhancements, can perform classification, prediction and pattern association as well. The GA has been used very effectively for function optimization and it can perform efficient searching for approximate global minima. It has been observed that the pattern recalling in the Hopfield type neural networks can be performed efficiently with GA. The GA in this case is expected to yield alternative global optimal values of the weight matrix corresponding to all stored patterns. The conventional Hopfield neural network suffers from the problem of non-convergence and local minima on increasing the complexity of the network. However, GA is particularly good to perform efficient searching in large and complex space to find out the global optima and for convergence. Considerable research into the Hopfield network has shown that the model may trap into four types of spurious attractors. Four well identified classes of these attractors are mixture states, spin glass states, compliment states and alien attractors. As the complexity of the of the search space increases, GA presents an increasingly attractive alternative for pattern storage & recalling in Hopfield type neural networks of associative memory. Much work has been done on the evolution of neural networks with GA. There have been a lot of researches which apply evolutionary techniques to layered neural networks. However, their applications to fully connected neural networks remain few so far. The first attempt to conjugate evolutionary algorithms with Hopfield neural networks dealt with training of connection weights and design of the neural network architecture, or both. Evolution has been introduced in neural networks at three levels: architectures, connection weights and learning rules. The evolution of connection weights proceeds at the lowest level on the fastest time scale in an environment determined by architecture, a learning rule, and learning tasks. The evolution of connection weights introduces an adaptive and global approach to training, especially in the reinforcement learning and recurrent network learning paradigm. Training of neural networks using evolutionary algorithms started in the beginning of 90's . Reviews can be found in. Cardenas et al. presented the architecture optimization of neural networks using parallel genetic algorithms for pattern recognition based on person faces. They compared the results of the training stage for sequential and parallel implementations. The genetic evolution has been used as data structures processing for image classification. The work on which we are mainly focusing is to studying the performance of Hopfield neural network for recalling of stored patterns with Hebbian rule and genetic algorithm for static images of English alphabets. A lot of learning rules have been suggested to improve the performance of Hopfield Neural Network. The conventional Hopfield model uses bipolar product rule or hebbian learning rule to encode the pattern information in the form of weight matrix. This one-shot Hebbian learning provides relatively poor capacity and recalling performance of the network.Here, we have employed genetic algorithm on Hopfield Neural Network to obtain such an optimal weight matrix on which the recalling of memorized patterns corresponding to the presented noisy prototype input patterns could improve. The objective of this study is to determine the optimal weight matrix for correct recalling of static images. For this purpose we have considered scanned static images of English alphabets as input stimuli and this input stimuli has preprocessed, filtered using Edge dilation method and represented as pattern

information by using Self Organizing Map (SOM). The code words generated from the SOM are input into the Hopfield Neural Network as pattern information using Hebbian rule. The simulated results demonstrate the better performance of Hopfield neural network for recalling of the stored static images of English alphabets using genetic algorithm.

Invited Speech 4: Intelligent Data Analysis

Speaker: Dr. Velmurugan Thambusamy, D.G.Vaishnav College, India
Time: 09:30-10:00, Saturday Morning, January 6, 2018
Location: Thip-Ubol, 3rd Floor, Arnoma Grand Bangkok

Abstract

Analyzing and mining data is now becoming a very popular research area not only for data mining and web mining but also for intelligent data analysis and its prediction. Data mining is a technique that has the ability to process and analyze large amounts of data and hence to discover valuable information from large data. In recent years, due to the booming of social communications and social network-based web services, data mining has become a very important and powerful technique to process large amount of data. Recently, many researchers are focusing on developing new data mining techniques and algorithms, or devoting to improve traditional mining techniques based on their intelligent analysis of data from social network. However, it is meaningless, if the discovered valuable and useful data have not been applied in real application environment. Social data are the aggregations of communication interaction and experience of people, and it is useful to leverage this type of data for decision-making. Thus, it could be an important time to shift the research focus to an application area, such as decision support systems for intelligent data analysis.

Invited Speech 5: Hybrid Artificial Intelligence Models and its Applications from Bankruptcy Prediction, fraud detection to Breast Cancer Detection

Speaker: Prof. Kuldeep Kumar, Bond University, Australia
Time: 10:20-10:50, Saturday Morning, January 6, 2018
Location: Thip-Ubol, 3rd Floor, Arnoma Grand Bangkok

Abstract

In this talk we will introduce some hybrid models which are hybrid of Artificial Intelligence techniques as well as some "modern multivariate techniques". We will demonstrate three applications of these hybrid models in bankruptcy prediction, fraud detection and breast cancer detection as mentioned below. Statistical business failure prediction models attempt to predict the failure or success of a business. Discriminant and logit analyses have traditionally been the most popular approaches, but there are also a range of promising AI techniques that can alternatively be applied. Besides discussing the application of a

new hybrid models we will also discuss the application of a relatively new modern multivariate technique of stochastic gradient boosting in business failure prediction and financial fraud detection. Breast cancer is the leading cause of death amongst women in the age group 40-55 years. Digital mammography is one of the most suitable methods for early detection of cancer. However, it is very difficult to distinguish benign and malignant micro calcification. We will demonstrate the application of hybrid models in the classification of benign and malignant micro calcification in digital mammograms.
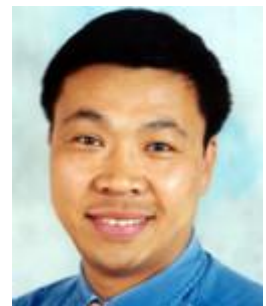
Invited Speech 6: Temporal Representation and Reasoning in Pattern

Recognition

Speaker: Dr. Jixin Ma, University of Greenwich, UK
Time: 10:50-11:20, Saturday Morning, January 6, 2018
Location: Thip-Ubol, 3rd Floor, Arnoma Grand Bangkok

Abstract
Pattern recognition aims at the operation and design of technologies to pick up meaningful patterns in data. In conventional pattern recognition systems, various patterns are usually represented as isolated collections of data while the temporal relationships between distinct patterns are neglected in most approaches. Generally speaking, temporal representation and reasoning is essential for many computer-based systems. In particular, an appropriate representation and reasoning for temporal knowledge seems necessary for recognizing pattern histories that usually involve rich internal temporal aspects, rather than just distinct patterns. Recognizing pattern histories actually plays an important role in solving problems including explanation/diagnosis, prediction/forecast, planning/scheduling, process management, and history reconstruction, etc. For instance, in the area of medical information systems, a patient's medical history is obviously very important. In fact, to prescribe the right treatment, the doctor needs to know not only the patient's current status, but also his/her previous health records. Similarly, in the weather forecasting, without a good understanding of climate phenomena based on past observations, the weather expert cannot make good predictions of the future. The purpose of this talk is to: (a) motivate and explain a topic of emerging importance in Computational Intelligence; (b) provide an overview on some fundamental issues with respects to temporal representation and reasoning; (c) present a framework for representing and recognizing pattern histories with rich internal temporal aspects. It is hoped that this talk will raise some special interests in representing and reasoning about the temporal aspects of knowledge in the community of Computational Intelligence.

Computer Science & Communications: Invited Session 2

Invited Speech 7: The arrival of the Sentinel-2 game-changer for applications in agriculture, forestry and natural resources management. Overview of BOKU activities.

Speaker: Prof. Clement Atzberger, University of Natural Resources and Life Sciences, Vienna (BOKU)
Time: 08:00-08:30, Saturday Morning, January 6, 2018
Location: Subongkot, 3rd Floor, Arnoma Grand Bangkok

 Abstract
The two identical Sentinel-2 satellites S2A and S2B were successfully launched in 2015 and 2017, respectively, as part of the European Copernicus program. Sentinel-2 carries an innovative wide-swath, high-resolution, multispectral imager (MSI) with 13 spectral bands; this offers unprecedented perspectives on our land and vegetation. The combination of high resolution (up to 10 m), novel spectral capabilities (e.g., three bands in the red-edge plus two bands in the SWIR), wide coverage (swath width of 290 km) and minimum five-day global revisit time provides extremely useful information for a wide range of land applications. The present talk provides a short overview of the new satellite's potential for various applications in agriculture, forestry and natural resources management. The example applications leverage the unique spectral, spatial and temporal characteristics of Sentinel-2. In the field of agriculture, we will present applications for crop type mapping, irrigation and N-management, as well as retrieval of crop bio-physical variables such as LAI. Regardings forests and natural resources, we will showcase examples where Sentinel-2 was successfully used for tree species identification, as well as change detection and tree vitality.

Invited Speech 8: Brazilian Amazon forest from space: monitoring systems using satellite images

Speaker: Prof. Yosio Shimabukuro, Divisão de Sensoriamento Remoto, Brazil
Time: 08:30-09:00, Saturday Morning, January 6, 2018
Location: Subongkot, 3rd Floor, Arnoma Grand Bangkok

Abstract
Amazonia is the greatest rain forest biome in our Planet, and the place where we can find the largest continuous extension of tropical forests still existing. In

Brazilian Amazon, an accelerated process of anthropization of extense mass of forest began by the end of the 1960 decade, due to governmental policies intending to integrate the vast Amazonian territory in the country with roads, human settlements, and the resultant expansion of frontiers for agriculture and cattle farming. The Brazilian government has historically organized its policies for surveillance and control of the Brazilian Amazon forest through the use of space technology tools. In operational terms, it has been made possible because historical data provided by Landsat-series satellites through a methodological development in the extraction of information from images taken by sensors (MSS, TM, ETM+, OLI/Landsat) to map and monitor activities that convert forest typology into areas of agriculture and/or cattle farming.

In face of constant international pressure, the PRODES– Brazilian deforestation monitoring project (http://www.dpi.inpe.br/prodesdigital/) has been set up inside INPE (Brazilian National Institute for Space Research). However, PRODES information is obtained using low temporal resolution images from Landsat (16 days), and very often the government and environment-control agencies need to have an efficient and operational procedure, as close as possible to a real-time follow up, to monitor the rapid dynamics of deforestation activities. Thus, since data from MODIS/Terra and MODIS/Aqua sensors became available, with a temporal resolution of about two days for the Amazonian region, these products have been providing for a very big potential

of application in near-real-time monitoring of deforested areas. In this way, a new methodology has been developed through a project called DETER (Real-Time Detection of Deforestation, http://www.obt.inpe.br/deter/indexdeter).

This work presents an overview of the spatial distribution of deforestation and its dynamics in the Brazilian Amazonia, taking from a regular program of annual (Analogic PRODES and Digital PRODES) and monthly (DETER) monitoring of that immense territory through remote sensing. Information given about rates (since 1988) and spatial distribution (since 2000) of this forest conversion has been useful to characterize the magnitude and the directions of change, giving subsidies to those who make decision and helping them to direct public policies and make an adequate environmental governance of this key region of our Planet, most especially in areas considered to be hot spots, where anthropic pressure is greater.

Invited Speech 9: Thin cloud detection and removal in optical data

Speaker: Prof. Yong Wang, East Carolina University and University of Electronic Sciences and Technology of China, China
Time: 09:00-09:30, Saturday Morning, January 6, 2018
Location: Subongkot, 3rd Floor, Arnoma Grand Bangkok

Abstract
Clouds selectively absorb and scatter the downward solar radiation and the upward radiation reflected from ground targets to optical sensors. Thus, remotely sensed optical data may not reveal the true spectral characteristics of a ground target. The presence of clouds in optical datasets affects the Earth observation using space borne optical sensors. Clouds are spatiotemporally heterogeneous. Their identification, extraction, and removal are not entirely

resolved yet although numerous cloud-related studies are conducted. One type of algorithms is the replacement approach using another dataset collected at different time. However, there are at least three concerns. There should be no clouds at the same regions in multi-temporal images or the replacement cannot be performed. Temporal variation of ground targets exists between the cloud-covered image and another cloud-free image. If another sensor is used to collect the cloud-free dataset, variations in sensor spectral, spatial, and radiometric resolutions as well as view-geometry can affect the outcome. Algorithms to remove thin clouds using the single image can generally overcome the concerns of the replacement algorithms. Thus, the latter algorithms are much more significant than the former ones because errors caused by multi-temporal or multi-sensor differences are avoided. Focusing on thin clouds and their removal, and using a single remotely sensed dataset, we summarize the achievements, and then present the theoretical framework of the detection, extraction, and removal of the clouds. Under the framework, the mechanism of the interaction between the cloud components and electromagnetic radiation is studied, and factors that are the most sensitive to thin clouds identified. Therefore, theusable-datapool is expanded after the cloud removal. The development of new theories and methods for quantitative remote sensing modeling and model-inversion can be furthered.

Invited Speech 10: Laser-based Lamb wave propagation and mode decomposition in detecting the integrity of structural I-beams and train rails

Speaker: Prof. Peter W. TSE, City University of Hong Kong, China
Time: 09:30-10:00, Saturday Morning, January 6, 2018
Location: Subongkot, 3rd Floor, Arnoma Grand Bangkok

Abstract

This paper addresses the studies carried out on an I-beam to reveal the wave propagation characteristics and tackle the multi-mode propagation of Lamb waves. In general, the excitation and reception of the waves in the specimen can be facilitated using contact and non-contact methods. However, in the contact based methods the sensors like the piezoelectric and magnetostrictive need be physically mounted and cannot be employed to structures with high temperature, limited access and inspection in a hazardous environment. The non-contact methods on the other hand, like the laser-based system is a new and attractive inspection technique because it can be used where contactable sensors cannot be integrated with the specimens. The experimental setup consisted of a new 3D Scanning Laser Doppler Vibrometer manufactured by Polytec (3D-SLDV) and was used to acquire high resolution time-space Lamb waves that were propagating in the I-beam. A high power and pulsed Nd:YAG laser was used to emit the required Lamb waves. The emission and sensing of the waves were carried out simultaneously. The wave propagation data was recorded by scanning the surface of the I-beam in a sequential manner. The 3D-SLDV measured the in-plane and out-of-plane velocities across a user-defined grid with sufficient resolutions in x and y directions. The measured data was used to

construct the wave patterns that were propagating in the I-beams at different time instants. Furthermore, as the waves in an I-Beam propagate with multiple modes even at low frequency range, filtering was carried out in the frequency-wavenumber domain in order to decompose the modes. The experimental mode having maximum correlation with the theoretical mode is extracted and time domain waveforms for this mode are reconstructed. The reconstructed waveforms bear single mode and can be interpreted easily as compared to the original data. The results presented thereby confirm that the new 3D-SLDV possesses tremendous capability in revealing the wave propagation characteristics and its interaction with defect. The results could be the first time that the waves propagating in a real I-beam can be visually observed, whilst in the past, it can only be visualized through simulation. The capability of using such totally laser-based 3D inspection system to reveal the characteristics of Lamb wave and its interaction with defects are substantial.

Invited Speech 11: Sensor over fibres and its application to high resolution millimeter-wave radar

Speaker: Prof. Tetsuya Kawanishi, Waseda University, Japan
Time: 10:20-10:50, Saturday Morning, January 6, 2018
Location: Subongkot, 3rd Floor, Arnoma Grand Bangkok

Abstract
This paper describes the concept of sensor over fibers (SoF), consisting of many sensor heads to gather information from environment. SoF transfer waveforms over fibers from the sensor heads for joint signal processing which enables high-resolution and agile imaging. SoF can gather information coherently at central signal processing units. We will also show applications of SoF technologies, such as high resolution millimetre-wave radar for airport runway surveillance.

Invited Speech 12: Multiple-parameter fiber sensing using variuos fiber Bragg gratings integrated with a WDM device

Speaker: Prof. Shien-Keui Liaw, National Taiwan University of Science and Technology
Time: 10:50-11:20, Saturday Morning, January 6, 2018
Location: Subongkot, 3rd Floor, Arnoma Grand Bangkok

Abstract
Fiber sensing has been extensively used in several areas such as petroleum mining and vibration sensing, pressure, acceleration and flow, and strain and

temperature measurement in composite materials for aircraft and helicopter structures. Among the current fiber optic sensing systems, fiber Bragg grating (FBG)-based sensor may be the most favorable one due to their real-time and remote sensing ability. In a fiber-laser-based FBG sensing system, the laser cavity forms part of the FBG sensor. Therefore, the changes in the FBG physical condition can be detected directly through the laser wavelength. The fiber laser sensor dynamic range is equivalent to the cavity length. In this talk, several multi-wavelength fiber sensing systems will be designed and demonstrated. The light source may be a semiconductor optical amplifier (SOA) or Erbium-doped fiber amplifier (EDFA). To construct a linear-cavity laser array, the rear cavity end may be a 2×2 fiber loop mirror or 3-port optical circulator; while the front cavity end may be a FBG. The characteristics and sensor performance of laser output for different sensing distances will be evaluated. The result shows that this SOA-based laser sensor array possesses a dynamic sensing distance of up to 40 km, while stress, temperature, strain and pressure detection were successfully achieved. An array waveguide grating integrated with an optical switch is also used to construct a multiple fiber sensing array with good sensing performance and high reliability.

Invited Speech 13:TBD

Speaker: Prof. Hamisai Hamandawana, University of Fort Hare, Department of GIS & Remote Sensing, Zimbabwe
Time: 11:20-11:50, Saturday Morning, January 6, 2018
Location: Subongkot, 3rd Floor, Arnoma Grand Bangkok

Abstract
TBD

Computer Science & Communications: Invited Session 3

Invited Speech 14: Processing Signals Generated from Computer Simulations of Turbulent Flows

Speaker: Prof. Farzad Mashayek, University of Illinois at Chicago, USA
Time: 14:00-14:30, Saturday Afternoon, January 6, 2018
Location: Thip-Ubol, 3rd Floor, Arnoma Grand Bangkok

Abstract
Turbulent flows are ubiquitous in natural phenomena and technological applications, such as severe storms around the world and combustion in jet engines. Understanding and prediction of turbulence has remained one of the longest-standing,

unsolved problems in science, despite nearly two centuries of widespread research. This is primarily due to the tremendous variations in flow properties in both time and space. Supercomputers are now routinely used to simulate and predict turbulent flows using hundreds and thousands of processors in parallel. One of the main difficulties associated with such large-scale simulations is the huge amount of data that needs to be processed in order to provide useful information for practical applications, e.g. outlet pressure distribution in a nozzle. This talk discusses novel ideas for processing flow signals (velocity, pressure, temperature, etc.) when dealing with gigabytes and even petabytes of data generated from massively parallel simulations of turbulent flows.

Invited Speech 15: Some innovation IOT Systems Integration and Applications

Speaker: Prof. Wen-Tsai Sung, Electrical Engineering, National Chin-Yi University of Technology, China
Time: 14:30-15:00, Saturday Afternoon, January 6, 2018
Location: Thip-Ubol, 3rd Floor, Arnoma Grand Bangkok

Abstract
IoT (Internet of Things) System is a rapidly developing area, a combination of Network, mathematics and computing technology, in order to enhance the complex sensors network and data aggregation. Traditional Wireless Sensors Networks method does not have the ability to process hung amounts sensors signals that is why the Wireless Sensors Networks design often only one cluster or one-layer framework. This speech issue brings together some of the optimal fusion of innovative information technology and methods and it provides to the listeners on this issue have further improved System Integration and Applications in Wireless Sensors Networks. This will allow scientists to develop smarter process strategies for multi-sensors signals and data.

Computer Science & Communications: Invited Session 4

Invited Speech 16: Remote Sensing Technologies for Planetary Exploration:

Examples from Recent Rovers on Mars

Speaker: Prof. Jim Bell, Arizona State University, USA
Time: 08:00-08:30, Sunday Morning, January 7, 2018
Location: Thip-Ubol, 3rd Floor, Arnoma Grand Bangkok

Abstract
Since 2004, NASA has successfully landed three highly-capable rovers on Mars: Spirit, Opportunity, and Curiosity, in some of the most ambitious missions of

robotic exploration ever attempted. Professor Jim Bell from the School of Earth and Space Exploration at Arizona State University is the President of The Planetary Society and one of the leading scientists in charge of the remote sensing color camera systems on these rovers. He has had an amazing front row seat for the photographic and geologic adventures of these sophisticated exploring robots. In this presentation, Prof. Bell will discuss the kinds of remote sensing measurements being used by planetary scientists to explore the surface of Mars (and other worlds), and will share many of his favorite images and stories from "inside" mission operations. The presentation will describe the major scientific findings made by Spirit for its six year adventure, by Opportunity during its nearly 15 year (and going!) mission, and by Curiosity during its five+ years of exploration on Mars. He will also discuss plans for the future remote sensing and in situ exploration of the Red Planet--including potential future human exploration--by NASA and other space agencies.

Invited Speech 17: Extreme nonlinear THz Optics – from absorption bleaching to high-order harmonics

Speaker: Prof. Tsuneyuki Ozaki, Institut national de la recherche scientifique, Canada
Time: 08:30-09:00, Sunday Morning, January 7, 2018
Location: Thip-Ubol, 3rd Floor, Arnoma Grand Bangkok

Abstract
High-field carrier transport dynamics at terahertz (THz) frequencies in semiconductors can lead to numerous ultrafast phenomena, such as THz pulse self-phase modulation, intense THz field induced impact ionization, as well as dynamic Bloch oscillations driven by ultra-high THz frequencies. In this work, we perform nonlinear THz-TDS measurement of InGaAs thin film using an intense THz source generated from an interdigitated ZnSe large-aperture photoconductive antenna, which can generate intense, asymmetric quasi-half-cycle THz pulses with low median frequency of approximately 0.2 THz. With the same peak field, the ponder motive potential is thus much higher than other higher frequency THz sources via, for example, optical rectification. Experiments reveal that at high fields of 185 kV/cm, we observe clear THz waveform modulations combined with compression of the half-cycle pulse. Compared with the incident THz spectrum, the transmitted THz pulse has higher spectral intensity at higher frequencies, demonstrating high-frequency THz generation. We studied the carrier dynamics in the conduction band of InGaAs using the ensemble Monte-Carlo method. The carrier dynamics become extremely nonlinear at high fields, showing an abrupt reduction in the current density with a dramatic shortening of the pulse duration, indicating the generation of high frequency components. We attribute these observations to the strong carrier intervalley scattering effects driven by the THz pulses with high ponder motive energy, which lead to an abrupt reduction of the photoconductivity due to the higher effective mass at upper valleys as well as the increased intravalley and intervalley scattering rates.

Invited Speech 18: Toward miniaturized integrated and low-cost circulators and isolators

Speaker: Prof. Vincent LAUR, Laboratoire Lab-STICC, France
Time: 09:00-09:30, Sunday Morning, January 7, 2018
Location: Thip-Ubol, 3rd Floor, Arnoma Grand Bangkok

Abstract

Microwave circulators and isolators are currently used in RF front-ends to protect devices that are sensitive to variations of power levels, such as amplifiers, from impedance mismatches. These devices are also often used in full-duplex systems when a single antenna is used. However, these devices are mainly fabricated by hybrid technologies (insertion of ferrite pucks in a triplate or microstrip structure) leading to high bulkiness and cost. Furthermore, bulkiness is exacerbated by the need for permanent magnets to polarize the ferrite pucks. Indeed, mass production of low-cost compact circulators remains a hot topic and new ideas and technologies are needed to improve the integration of these devices. Removing the magnets appears to be a way to decrease circulator size. This can be achieved by the use of pre-oriented hexaferrites, especially M-type strontium hexaferrites. Indeed, these materials make it possible to keep a strong magnetization without applying an external magnetic field. Experimental demonstrations will be presented in this talk. However, this concept is mainly limited to millimeter-wave frequencies (even if some demonstrations were realized at frequencies as low as 10 GHz) due to the high anisotropy field of these ferrites. At lower frequencies, some technological means make it possible to increase the integration and to decrease the cost of circulators. Recently, substituted Yttrium Iron Garnet (YIG) ferrites were developed in order to be compatible with a Low Temperature Co-fired Ceramics (LTCC) process. A sintering temperature of 880 ℃ can be achieved by using Vanadium and Bismuth substitutions, while keeping dielectric and magnetic properties compatible with the realization of microwave circulators. Experimental demonstrations of X-band (8-12 GHz) circulators in LTCC technology will be presented. As this technology allows co-sintering ferrite, dielectric and metal in a unique step, it appears to be a promising way to decrease the cost of these components.

Invited Speech 19: BIOMEDICAL T-RAY IMAGING - A NON-HAZARDOUS TECHNIQUE IN EARLY DETECTION OF MALIGNANT TUMOR

Speaker: Prof. M Mukherjee, ADAMAS UNIVERSITY, India
Time: 09:30-10:00, Sunday Morning, January 7, 2018
Location: Thip-Ubol, 3rd Floor, Arnoma Grand Bangkok

Abstract

Terahertz medical nano-electronics is rapidly developing all over the world. It has huge application possibilities in the wide fields of Science, Engineering and Biomedical sectors. Although there is no doubt about its application possibilities, Scientists all over the world are in search of suitable low cost, compact source that can generate THz power for the purpose of non invasive, non hazardous imaging with great accuracy for early detection of malignant tumor in human. Now-a-days in developed countries medical Scientists are gradually realizing the need of development of some high frequency sources that has no adverse effect on the human. While passing through the body, X-ray damages cell and it is hazardous for multiple time applications. As a result, scientists are in search of suitable alternatives. Solid state devices have immense application possibilities in room temperature application, which is very essential criterion for any biomedical applications. Also compactness of a device is required for its useful applications in biomedical sectors. Realizing the ever increasing demand of suitable room temperature solid state low cost, compact nano dimensional source to replace X Ray for imaging applications, the author has carefully studied the possibilities of a proposed novel device in Thz regime. The present talk will certainly throw light on this Tera - Gap. The proposed device will meet the ever increasing demand with great success. The model, fabrication, characterization and imaging part with the device will be discussed thoroughly in this talk. Medical electronics engineers, Nano technologist will be greatly benefited.

Invited Speech 20: Application of Microwave Technologies to Improve Biocompatibility of Cardiovascular Implants

Speaker: Prof. Miran Mozetič, Jozef Stefan Institute, Slovenia
Time: 11:20-10:50, Sunday Morning, January 7, 2018
Location: Thip-Ubol, 3rd Floor, Arnoma Grand Bangkok

Abstract

A method for improving vascular grafts biocompatibility by nano-structuring of original smooth polymeric grafts and functionalization with selected functional groups prior to deposition of a heparin coating is presented. The method is based on application of a microwave electrical discharge. A polymeric vascular graft of diameter 6 mm was mounted onto a quartz tube which was placed into the resonance cavity

connected to a microwave generator operating at the standard frequency of 2.45 GHz and output power 200 W. A strong electromagnetic field caused appearance of gaseous plasma inside the quartz tube. Reactive gaseous species diffused onto the graft causing nanostructuring of the polymeric graft as well as functionalization with amino groups. Such a pretreatment allowed for covalent bonding of heparin onto the graft surface. The innovative grafts were then incubated with human blood and heamostatic response was measured. The concentration of blood platelets in activated states on the surface of the treated graft dropped for over 100 times as compared to untreated grafts indicating almost perfect anti-thrombogenic properties. Furthermore, the proliferation of endothelial cells was improved significantly as compared to standard vascular grafts.

Medicine & Healthcare: Invited Session 1

Invited Speech 1: Could hypertension reduce periodontitis?

Speaker: Dr. Hyun-Duck Kim, Seoul National University School of Dentistry, South Korea
Time: 08:00-08:30, Saturday Morning, January 6, 2018
Location: Pathummas, 3rd Floor, Arnoma Grand Bangkok

Abstract
Aim: Could hypertension reduce periodontitis? To guide an answer about this question, we evaluated the association of hypertension and high systolic and diastolic blood pressure (SBP and DBP) with periodontitis in a nationally representative Korean adult population. Materials and Methods: Total of 14,625 participants of Fourth Korea National Health and Nutrition Examination Survey (KNHANES IV) aged over 19 years were cross-sectionally surveyed. Periodontitis was defined as CPI score of 3 or 4. Hypertension was categorized as: normotensive (SBP < 120 mmHg and DBP < 80 mmHg), pre-hypertensive (120 < SBP < 140 mmHg or 80 < DBP < 90 mmHg) and hypertensive (SBP $\geqslant$ 140 mmHg or DBP $\geqslant$ 90 mmHg or taking antihypertensive medication). Multivariate Poisson regression analyses were performed controlling for age, sex, household income, drinking, smoking, physical activity, obesity, hypercholerolemia and diabetes mellitus. Stratified analyses were performed to identify specific risk groups. Results: Hypertension showed a significant positive association with periodontitis in the fully adjusted model in female adults with a dose–response relationship. This association was highlighted in females aged 30–59 years (prevalence ratio = 1.25; 95% confidence interval: 1.11–1.40). The strength of the association was highest in females aged 30–39 years and decreased with increasing age. Among females aged 30–59 years, high-risk groups of this link were lower middle income quartile, never drinker and non-diabetes groups for both pre-hypertension and hypertension. Conclusion: Our data showed that hypertension was associated with periodontitis in Korean female adults independent of known confounders. Thus, it is speculated that the prevention of hypertension could reduce periodontitis especially among females.

Invited Speech 2: ALTERNATIVE MEDICINE

Speaker: Dr. Pradeep Tangade, Department of Public Health Dentistry, India
Time: 08:30-09:00, Saturday Morning, January 6, 2018
Location: Pathummas, 3rd Floor, Arnoma Grand Bangkok

Abstract

Even though oral health is an integral Part of General health it is often neglected and not address seriously. Medicine is now moving from illness to wellness. Traditional Indian medicine of yoga has become popular worldwide. People understand the importance of yoga to stay healthy and fit. Many studies have shown the impact of allied health care in maintaining the health. Proper breathing exercise helps in prevention of malocclusion, and gingivitis. In this competitive world, stress seems to become everywhere. Everyone in the daily life experience stress. It's hard to get away from it. Sometimes you feel like its chases after us. Therefore yoga is great way to reduce stress. Yoga helps us to clear our thoughts and focus on breathing techniques which itself as many therapeutic its benefits. Stress is directly or indirectly related with the health of our teeth and gums. People who are stress have a tendency to grind their teeth, which causes the teeth to worn out resulting in micro-cracks and broken fillings which can lead to nerve damage, where the dentine gets exposure which results in sensitivity to heat and cold. Gum recession due to pressure on gum line, there will be a pocket formation caused by the rocking motion of teeth then grinding, headache and aching jaws due to overworked jaw muscles and jaw impairment. Additionally stress can cause the salivary glands to slow the production of saliva which is an important ingredients for washing away the bacteria and food particles so when the mouth is dried its provides and ideal environment for bacteria to thrived. This bacteria if left alone can cause serious dental disease like tooth decay and gum diseases.

Invited Speech 3: Endophytic Microbes: An untapped source of Pharmacological Bioactive Potent Moieties

Speaker: Prof. Muhammad Shahid, University of Agriculture, Pakistan
Time: 09:00-09:30, Saturday Morning, January 6, 2018
Location: Pathummas, 3rd Floor, Arnoma Grand Bangkok

Abstract

Endophytic microbes have received huge attention of scientific community due to their ability to produce bioactive secondary metabolites. These potent moieties have great significance in development processes and drug discovery. The objective of our talk was to evaluate the biological potential of endophytic bacterial extracts in normal and induced salt stress culture and analyzed some of their chemical constituents through

UV-Vis spectroscopy and high performance liquid chromatography. Bacterial metabolites were extracted with ethyl acetate and subjected for their biological potential through different biological assays. The results of biological evaluation based on the different assays revealed that extracts of endophytic bacteria possess significant antioxidant and antimicrobial potential with least toxicity towards human RBCs. These compounds also exhibited clot lysis potential and showed protection of CT-DNA from H2O2 induced damage. The samples were also test on mutant strains Salmonella typhi TA98 and 100 and it was concluded that extracted compounds showed non-mutagenic profile against the tested strains. UV-Vis profiling of ethyl acetate extract suggest the presence of phenolic compounds in extracts, which was confirmed by HPLC. Our study suggests that bacterial endophytic are also potential source of antioxidant, antimicrobial compounds; and quantity of these compounds may be increased by varying culture conditions.

Invited Speech 4: TBD

Speaker: Dr. Itamar Shabtai, College of Management, Academic Studies, Israel
Time: 09:30-10:00, Saturday Morning, January 6, 2018
Location: Pathummas, 3rd Floor, Arnoma Grand Bangkok

Abstract
TBD

Medicine & Healthcare: Invited Session 2

Invited Speech 5: Biomarkers in preeclampsia: how can they may help to understand the syndrome

Speaker: Prof. Valeria Sandrim, Universidade do Estado de S ão Paulo, Brazil
Time: 14:00-14:30, Saturday Afternoon, January 6, 2018
Location: Pathummas, 3rd Floor, Arnoma Grand Bangkok

Abstract
BACKGROUND: Preeclampsia result in maternal and fetal complications and some studies have reported the role of MMPs and TIMPs in its pathophysiology. Therefore, the aim of this study was measure plasma TIMP-4 levels and correlate with expression of Let-7a-5p (3 UTR post-transcriptionally regulation) in preeclampsia and healthy pregnancy. METHODS: TIMP-4 was measured by ELISA and miR-Let7a-5p expression by qPCR in preeclampsia (n=13) and their respective healthy pregnant

controls (n=12). RESULTS: Elevated plasma TIMP-4 levels in preeclampsia compared to healthy pregnant was found (1450 ± 411 vs. 775 ± 210 pg/mL, respectively; P<0.0001); and a negative correlation was found (r=-0.39, P=0.06, including both healthy and preeclampsia). CONCLUSIONS: TIMP-4 may be post-transcriptally regulated by Let-7a-5p. This may help to the understanding of physiopathology of disease. Keywords: preeclampsia, TIMP-4, TIMPs, MMPs, Let-7a-5p, microRNA, hypertension.

Invited Speech 6: The Maternal fetal interaction in the ABO Blood group system:

A comparative analysis of healthy mother and couples with spontaneous abortion

in Bengalee population.

Speaker: Prof. Arup Ratan Bandyopadhyay, UNIVERSITY OF CALCUTTA, India
Time: 14:30-15:00, Saturday Afternoon, January 6, 2018
Location: Pathummas, 3rd Floor, Arnoma Grand Bangkok

Abstract

The selective effects on genotypes could generally be perceived by its manifestation in prezygotic and postzygotic stages, which is further extendable to neonatal and postnatal periods in human. Selective elimination of genotypes could generally be perceived by the study of reproductive performance of the couple on the basis of their mating types. Actual studies on the products of conception, living, or dead (aborted material) of these couples essential for understanding of process of selective elimination of the alleles. Out of 124 spontaneous abortions occurring during the first 16 weeks of gestation, simultaneous karyotyping and ABO blood grouping of 148 of the parents was carried out. In 80 of the 124 chromosome-analyzed aborted foeti, the ABO blood groups of the foeti were determined by the mixed cell agglutinating reaction in fetal tissue. The results of the ABO blood grouping were compared with that of 100 newborns along with their parents (181) from the same area. Among aborted foeti with normal karyotype, a significantly higher (P < 0.05) frequency of ABO incompatibility was found in couple combination in comparison with the couple combination of the parents of the newborns. Furthermore, the distribution ABO blood group alleles of the fetuses deviated significantly from those of newborns (P < 0.05) in terms of significantly higher A alleles among the fetus. The ABO incompatibility between the couples is likely to be a risk factor for early spontaneous abortions and also the heterozygote selection of ABO blood group genotypes.

Invited Speech 7: Quality management in IVF - the Australian experience

Speaker: Prof. Michael Chapman, University of London, Australia
Time: 15:00-15:30, Saturday Afternoon, January 6, 2018
Location: Pathummas, 3rd Floor, Arnoma Grand Bangkok

Abstract

In the early days of IVF in Australia the Fertility Society of Australia established the first accreditation process for ART in the world. Through the Reproductive Technology Accreditation Committee, Code of Practice was implemented against which clinics are assessed on an annual basis. This paper will rebiew the evolution of the CoP until 2017. In 2013 the FSA established an International CoP which now covers Singapore clinics and a number of clinics in Vietnam. In conjunction with RTAC the FSA established a national database to ensure the safety of outcomes now known as ANZARD in which every cycle of ART is recorded. Results of the most recent annual report will be presented.

Invited Speech 8: Induction of labour in low-risk women: Is 39 the new 41?

Speaker: Prof. Rohan D'Souza, University of Toronto, Canada
Time: 15:30-16:00, Saturday Afternoon, January 6, 2018
Location: Pathummas, 3rd Floor, Arnoma Grand Bangkok

Abstract

This presentation summarises published evidence on pregnancy outcomes at various stages of gestation in an attempt to determine the best time to induce labour in low-risk women to optimise maternal and fetal/neonatal outcomes, while simultaneously lowering caesarean section rates.

Medicine & Healthcare: Invited Session 3

Invited Speech 9: Breastfeeding : The Birth Right of Baby

Speaker: Prof. Manjubala Dash, Mother Theresa Post Graduate and Research Institute of Health sciences, India
Time: 08:00-08:30, Sunday Morning, January 7, 2018
Location: Subongkot, 3rd Floor, Arnoma Grand Bangkok

Abstract

Breastfeeding is a socially constructed and controlled practice. It is often

presented as a natural practice, sadly corrupted and curtailed by cultures. Breastfeeding is presented as the best practice for mothers and babies. As a global goal for optimal maternal and child health and nutrition, all women should be enabled to practice exclusive breastfeeding, and all infants should be fed exclusively on breast milk, from birth to 6 month of age. Breastfeeding is nearly universal in India and other South East Asian contries. But on the contrary to there commendations of WHO only 2/ 3rd of children less than 6 months of age are exclusively breast fed. Numerous barriers to breastfeeding like lack of accurate information and lack of appropriate knowledge among the population in general have been identified. According to a study, a major barrier to successful in hospital breast-feeding is inconsistency in information and nursery practices related to breastfeeding management. Breastfeeding has been accepted as the most vital intervention for reducing infant mortality and ensuring optimum growth and development of children. More than 15% of child deaths could be averted in India by optimal breast feeding practices. Appropriate feeding practices are of fundamental importance for the survival, growth, development and health of infants and young children. IYCF guidelines in India recommend that a baby should be exclusively breastfed till 6 months and should receive breast milk minimum till 2 years of age. Though it's a natural process, breastfeeding success has many hurdles like Breast engorgement, mastitis, inadequate milk supply, working mothers, NICU admissions of neaonatesetc. For example, problems of latching are seen in54.8% of cases and Problems for initiation of breast feeding are present in 5.65% in a study conducted by Ram C et al, 2011. Hence it is considered that education programme is required for all the mothers to have successful initiation and continuation of breastfeeding.

Invited Speech 10: VITAMIN D DEFICIENCY : A CONCERN FOR BANGLADESHI CHILDREN

Speaker: Prof. Mohammad Salim Shakur, United Hospital Limited, Bangladesh
Time: 08:30-09:00, Sunday Morning, January 7, 2018
Location: Subongkot, 3rd Floor, Arnoma Grand Bangkok

Abstract

Primary Objectives

- Assessment of prevalence of vitamin D deficiency (VDD) among children living in urban and rural Bangladesh
- To assess risk factors for VDD in such children

Secondary objectives

- To determine if VDD is a part of broader nutritional problems like under nutrition, anaemia, iron deficiency, hypocalaemia etc.

Study design

- A multicentre (urban and rural based) cross sectional prospective study – using serum 25 hydroxy vitamin D (25-OHD) as a marker of vitamin D status. Serum level of alkaline phosphatase,calcium and phosphate status for additional information about Vitamin D status.

Setting

- Urban based: Paediatric Outpatient Department, United Hospital Limited, Gulshan 2, Dhaka-1212
- Rural based : Medical Outpatient Department, Upozilla Health Complex, Ghatail, Tangail

Subject and Methods

Study population:

- Chiltren 1 to 10 years of age attending OPD with either weight for age,weight for height,height for age <- 1 SD z score or clinical features suggestive of vitamin D deficiency were included in the study
- Data were collected by questionnaire,medical assessment and laboratory test

RESULTS

Total 150 children were studied with 102(68%) urban and 48 (32%) rural children. Suboptimum vitamin D (25-OHD <30 ng/ml) were found in 75% of children. Urban children (81%) were more associated with hypovitaminoisis D compared to rural children(62%) which was statistically significant(OR 0.382,95% CI O.177-0.822). Inadequate exposure to sunlight was significantly more associated with hypovitaminosis D compared to adequate exposure to sunlight (OR 2.475,95% CI 1.139-5.380).No significant association of VDD were detected with skin color of children,covering clothes of mother,exclusive breast feeding and limb pain.Children of higher educated mother(>SSC) were more associated with VDD. Although VDD were highly prevalent among children with growth failure,no significant statistical association were found with vitamin D status and anthropometric status. Higher prevalence of anaemia were detected in study population,however no significant association were detected between vitamin D status and anaemia,iron deficiency and serum calcium status.

CONCLUSION

Vitamin D deficiency(VDD) particularly asymptomatic(non skeletal) VDD is common among Bangladeshi children,urban children being more vulnerable to VDD.Poor exposure to sunlight is significantly associated with VDD.Screening of children for VDD,anaemia and iron deficiency is appropriate for children population at risk.

Invited Speech 11: What does the meta-analysis of randomized controlled trials tell us about the optimal duration of dual antiplatelet therapy?

Speaker: Prof. Bernard M Y Cheung, Queen Mary Hospital, University of Hong Kong, Hong Kong (China)
Time: 09:00-09:30, Sunday Morning, January 7, 2018
Location: Subongkot, 3rd Floor, Arnoma Grand Bangkok

Abstract
To prevent stent thrombosis after drug-eluting stent (DES) implantation, dual antiplatelet therapy (DAPT), a combination of aspirin and a P2Y12 inhibitor, is required. However, the optimal duration of DAPT remains unclear. Twelve months have been the standard duration. Longer DAPT duration reduces the risk of thrombosis but increases the risk of bleeding. The DAPT trial showed some advantages in extending DAPT duration beyond 12 months, but at the cost of more bleeding. As newer stents become available, shorter DAPT durations have also been advocated. We have therefore carried out meta-analyses on the optimal DAPT duration and more recently, a network meta-analysis, to resolve the issue. We analyzed twelve large randomized trials with altogether 34920 patients. Extended DAPT (>12 months) decreased the frequencies of myocardial infarction and stent thrombosis when compared to 12 months' DAPT (OR 0.56; 95%CI 0.46-0.68 and OR 0.44; 0.30-0.65) and short-term (<12 months) DAPT (OR 0.58; 0.44-0.77 and OR 0.49; 0.29-0.82). However, it increased the risk of major bleeding when compared to 12 months' (OR 1.53; 1.21-1.93) and short-term DAPT (OR 2.58; 1.62-4.10). Essentially, prolonging DAPT reduces thrombotic risk is but increases bleeding risk. Therefore, there is no optimal DAPT duration for all patients and DAPT duration should be individualized according to the benefit-risk profile of each patient. Risk scores such as the DAPT score might help clinical decisions regarding DAPT.

Invited Speech 12: "New Emerging Paradigms of Targeted Molecular Therapy for Inherited Cardiovascular Conditions"

Speaker: Prof. Dhavendra Kumar, Cardiff University, UK
Time: 09:30-10:00, Sunday Morning, January 7, 2018
Location: Subongkot, 3rd Floor, Arnoma Grand Bangkok

Abstract

Inherited cardiovascular conditions (ICC) include a number of heterogeneous genetic and genomic disorders with highly variable phenotypes. Most phenotypes represent isolated or syndromal developmental anatomic cardiac anomalies, aberrant vasculature of the heart, cardiac muscle disorders, cardiac conduction diseases and abnormal cardiac rhythm disorders. Genetic and genomic heterogeneity is recognized by monogenic, oligogenic, multigenic, polygenic and mitochondrial genetic causation underpinning complex molecular pathology.

With the knowledge of specific gene and molecular involvement, it is now possible to target specific location or region for either converting to milder phenotype or complete avoidance of the major cardiac dysfunction. Major developments in few monogenic ICC have allowed clinical trials designed on selected molecular targets. However, progress in the treatment of congenital cardiac developmental anomalies has not yet come to clinical domain. A number of genes and molecules (TBX1, TBX5, Nkx2.5, GATA etc.) are selected for pre-clinical trial phase using animal models.

Current ICC molecular therapeutic targets include suppression of TGF beta signaling using angiotensin receptor blockers in Marfan syndrome, autosomal dominant aortic dilatation/dissection and related inherited diseases with arterial proliferation. Initial trial outcomes are promising and work continues.

Promising results from initial pre-clinical trial studies are now available in hypertrophic cardiomyopathy (HCM), an autosomal dominant cardiomyopathy largely due to mutations in a number of sarcomere genes. Recent reports highlight successful CRISPR/Cas9 gene editing and RNA reversal approaches. Following successful implementation of MTOR inhibitors in the treatment of tuberous sclerosis hamartomas, other genetic conditions (Noonan, Cardio-Facio-Cutaneous and Costello syndromes) resulting from mutations in RAS/MAPK pathway genes are also targeted. Activating mutations in RAS/MAPK genes also result in HCM phenotype. This led to design of new clinical trials on the role of MTOR/MAPK inhibitors in non-sarcomere HCM.

So far prospects for targeted molecular therapy in complex polygenic/ multifactorial cardiovascular diseases (coronary artery diseases, systemic hypertension) are not good simply due to the fact that there are several hundreds of loci spread across the human genome indicating multiple

molecular targets. However, it is possible that in future novel therapeutic regimen would be possible harnessing gains of targeted molecular therapy in monogenic ICCs.

Invited Speech 13: Neuroprotective effects of date fruit in neurological disorders

Speaker: Prof. Asadi-Shekaari M, Kerman University of Medical Sciences, Iran
Time: 10:20-10:50, Sunday Morning, January 7, 2018
Location: Subongkot, 3rd Floor, Arnoma Grand Bangkok

Abstract
TBD

Invited Speech 14: Genetically modified monkey models of neurological disorders

Speaker: Prof. Xiao-Jiang Li, Department of Human Genetics, Emory University, USA
Time: 08:00-08:30, Sunday Morning, January 7, 2018
Location: Pathummas, 3rd Floor, Arnoma Grand Bangkok

Abstract
Genetically modified animal models have been extensively used to investigate the pathogenesis of age-dependent neurodegenerative diseases, such as Alzheimer (AD), Parkinson (PD), Huntington (HD) diseases, and Amyotrophic lateral sclerosis (ALS). The common feature of these diseases is the age-dependent accumulation of misfolded proteins in the brain, which can be recapitulated in a variety of mouse models of neurodegenerative diseases. However, the brains of transgenic mouse models of AD, PD, and HD do not show the striking neuronal loss or degeneration that is a typical pathological feature in patient brains. Species differences between small animals and humans may account for differential pathology in transgenic mouse models and patient brains. We have used transgenic approaches and CRSPR/Cas9 gene targeting to generate non-human primate models of human diseases. Comparison of transgenic rodent and monkey models of neurodegenerative diseases revealed that large animals may be more sensitive to misfolded proteins and can mimic neuropathology that is more similar to that in patient brains. These studies suggest that non-human primate models should be considered as complementary models to uncover important pathological changes seen in patient brains.
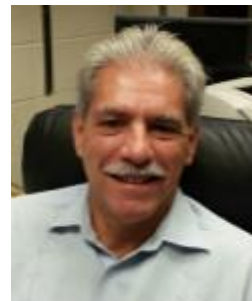
Invited Speech 15: Age-related Differences in the Response to Leukemia Inhibitory Factor after Experimental Stroke

Speaker: Prof. Keith R Pennypacker, University of Kentucky, USA
Time: 08:30-09:00, Sunday Morning, January 7, 2018
Location: Pathummas, 3rd Floor, Arnoma Grand Bangkok

Abstract

Leukemia inhibitory factor (LIF) is an anti-inflammatory cytokine that confers neuroprotection when administered systemically after permanent middle cerebral artery (MCAO) occlusion in male three month old Sprague-Dawley rats. The neuroprotective intracellular signaling occurs through the activation of Akt kinase in both oligodendrocytes and neurons. Expression of antioxidant genes is increased in both these neural cell types; oligodendrocytes express peroxiredoxin-4 and metallothionein-3, while neurons express superoxide dismutase-3. Intravenous administration of LIF at 6, 24, and 48 post-stroke results in significantly reduced infarct volume and increased motor recovery at 72 h post-MCAO. LIF treatment ameliorated the post-stroke inflammatory response that originates in the spleen. Animals treated with LIF had a significantly smaller reduction in spleen weight and significantly lower splenic levels of the inflammatory cytokine IL-12 compared to rats treated with PBS. Furthermore, LIF also significantly reduces the number of inflammatory macrophages/microglia in the brain as measured by CD11b protein levels. The LIF receptor gp190 subunit (LIFR) couples with the IL-6 receptor subunit and binds LIF and other neurotropic cytokines to relay intracellular neurosurvival signaling. The above three- dose treatment regimen significantly increased expression of LIFR in the ipsilateral hemisphere of the brain at 72 h after stroke compared to sham surgery and PBS treatment. LIFR mRNA levels were significantly elevated in cultured neurons that were treated with LIF prior to 24 h in vitro ischemia compared to neurons that were treated with PBS. LIFR is localized to neuronal nuclei in the uninjured brain. During brain injury, LIF receptor translocates to the cell membrane and this translocation is enhanced by LIF treatment. However, LIF treatment of aged female and male rats (1.5 yo) does not increase LIFR expression and is not as neuroprotective after MCAO using this 3 dose regimen. Endothelial LIFR transports LIF transporter across the blood brain barrier. The aged brain would have reduced transport of LIF to the infarct and thus, decreased neuroprotection. Since most stroke studies utilize young rats and the human stroke population is aged, this finding could explain at least partially why rodent studies do not translate to human ones. We are further examining LIFR expression at the blood-brain barrier to determine if this transporter is the key to a reduced response to LIF treatment in elderly rats.

Invited Speech 16: Spinal subpial AAV9 and cell delivery for treatment of neurodegenerative disorders

Speaker: Prof. Martin Marsala, University of California, US
Time: 09:00-09:30, Sunday Morning, January 7, 2018
Location: Pathummas, 3rd Floor, Arnoma Grand Bangkok

Abstract

Effective in vivo use of adeno-associated virus (AAV)-based vectors to achieve gene-specific silencing or upregulation in the central nervous system has been limited by the inability to provide more than limited deep parenchymal expression in adult animals using delivery routes with the most clinical relevance (intravenous or intrathecal). Similarly current clinical protocols used to deliver cells into spinal parenchyma (as used in human spinal trauma or ALS trials) employ a direct needle penetration. As such this approach is very limited in achieving a wide-spread repopulation of spinal neuraxis by injected cells. In recent studies we have developed and validated a subpial vector and cell delivery technique in adult rat, pig and non-human primates. Collectively we have demonstrated that the spinal pia membrane represents the primary barrier limiting effective AAV9 and cell penetration into the spinal parenchyma after intrathecal cell or AAV9 delivery. Using adult rats and pigs we showed (i) potent spinal parenchymal transgene expression in white and gray matter including neurons, glial and endothelial cells at 14-28 days after single bolus subpial AAV9 delivery; (ii) delivery to almost all apparent descending motor axons throughout the length of the spinal cord after cervical or thoracic subpial AAV9 injection; (iii) potent retrograde transgene expression in brain motor centers (motor cortex and brain stem); and (iv) widespread cell migration of subpially injected human cortical stem cells at 6 months after cell delivery. We have also demonstrated the relative safety of this approach by defining normal neurological function for up to 6 months after AAV9 or cell delivery. Thus, subpial delivery of AAV9 or stem cells enables gene-based or cell-replacement-based therapies with a wide range of potential experimental and clinical utilizations in adult animals and human patients suffering from debilitating spinal neurodegenerative disorders including ALS, spinal trauma or multiple sclerosis.

Invited Speech 17: Glial Function in polyglutamine expansion-mediated neurodegeneration

Speaker: Prof. Shi Hua Li, Department of Human Genetics, Emory University United States, China
Time: 09:30-10:00, Sunday Morning, January 7, 2018
Location: Pathummas, 3rd Floor, Arnoma Grand Bangkok

Abstract
Polyglutamine (PolyQ) expansion causes at least 9 neurodegenerative diseases. Including huntington's disease (HD), Spinal cerebellum atxia (SCA) 1,2,3,6,8,17, spinal and bulbar muscular atrophy (SBMA), and Dentatorubral-pallidoluysian atrophy (DRPLA). In these diseases, mutant polyQ protein tends to misfold and forms aggregates in specific brain regions, leading to preferential neuronal loss in the selective brain regions. Many studies have focused on the neuronal loss in the brains of polyQ diseases mouse models and human patients. However, glial cells are the majority cell types in the brain, and whether mutant polyQ proteins cause functional defects in glia and whether such defects contribute to neurodegeneration in polyQ diseases remain to be fully investigated. We have studied the effect of polyQ expansion in the glial cells in HD and spinal cerebellum ataxia 17 (SCA-17). We found that the presence of mutant polyQ proteins in glial cells caused a number of glial dysfunctions, including BDNF release impairment, reduced mutant protein clearance and demyelination, which significantly contributed to the pathogenesis of the polyQ diseases. We also reported that mutant polyQ protein induces neurotoxicity via both cell autonomous and non-autonomous mechanisms.

Invited Speech 18: The challenge of comorbidities, aging and pregnancy to the protection of the heart against ischemia/reperfusion injury

Speaker: Prof. Fawzi A. Babiker, Kuwait University, Kuwait
Time: 10:20-10:50, Sunday Morning, January 7, 2018
Location: Pathummas, 3rd Floor, Arnoma Grand Bangkok

Abstract
Intermittent dyssynchrony, induced by left ventricular pacing (pacing postconditioning (PPC)) induces cardioprotection against ischemial/reperfusion (I/R) injury when applied immediately at the beginning of reperfusion. Old age, diabetes, left ventricle hypertrophy and pregnancy are recognized risk factors that increase prevalence of ischemic events and poor clinical recovery following acute myocardial infarction. The coexistence of these risk factors with ischemic heart disease (IHD) worsens the prognosis of the disease and may lead to fatal arrhythmias and heart failure. Strong body

of evidence suggests an elevated threshold for the protection of the hearts burdened by coexistence of these risk factors. Nevertheless, we and others have demonstrated a normal vulnerability to ischemic insult in these hearts compared to control hearts. However, postconditioning, the relatively recent procedure of heart protection showed controversial results in the protection of hearts with comorbidities. We investigated the vulnerability of hearts burdened by aging, diabetes, left ventricle hypertrophy and pregnancy to IHD and the effect of stress duration and the gender difference in the outcome of their protection by postconditioning. We used Langendorff perfused rat hearts to evaluate the potential effects of postconditioning on ischemic hearts in the coexistence of these stressing factors or comorbidities. Interestingly our data did not show a significant difference in the vulnerability of these hearts to the ischemic insult. Hearts isolated from pregnant animals showed a significant improvement in heart function when subjected to ischemia and postconditioning. Posconditioning did not protect the diabetic heart against I/R injury. Aging and hypertrophied hearts showed a discrepancy in their protection with the female heart better protected compared to the male heart. Therefore, we suggest variable regimens in the clinic for treatment of male and female hearts against I/R injury. Furthermore, we recommend further studies using other procedures or combined procedures for the protection of hearts with comorbidities against I/R insult.

Part III   Technical Sessions

Computer Science & Communications: Invited& Technical Session 1

Session Chair: Prof. Farzad Mashayek, University of Illinois at Chicago, USA

Thip-Ubol, 3rd Floor, Arnoma Grand Bangkok   14:00-18:00, Saturday Afternoon, January 6, 2018

ID	Paper Title	Author	Affiliation
Invited **14:00-14:30**	Processing Signals Generated from Computer Simulations of Turbulent Flows	Prof. Farzad Mashayek	University of Illinois at Chicago
Invited **14:30-15:00**	Some innovation IOT Systems Integration and Applications	Prof. Wen-Tsai Sung	National Chin-Yi University of Technology
Oral **1-1**	Passive Localization Using Time Difference of Arrival and Frequency Difference of Arrival	Xiansheng Guo	University of Electronic Science and Technology of China
Oral **1-2**	Task-specific Gait Analysis: Faller Versus Non-faller Comparative Study	Rami Alkhatib	Rafik Hariri University
Oral **1-3**	Individual Identification Using ECG Signals	Mohamad Diab	Rafik Hariri University
Oral **1-4**	Effects of JPEG Compression on Reading Optical Watermarking Embedded by Using Color–difference Modulation	Kazutake Uehira	Kanagawa Institute of Technology
16:00-16:20	**Coffee Break**		
Oral **1-5**	Real time power monitoring detection based on Sequence Time Domain Reflectometry Approach	Mahmoud Alahmad	University of Nebraska-Lincoln
Oral **1-6**	A 3D source Fingerprinting-based Localization system	Nadia ALOUI	Laboratoire d'acoustique de l'université du Maine LAUM
Oral **1-7**	View direction adaptive 360 degree video streaming system based on projected area	San Kim	Kyung-hee University

ID	Paper Title	Author	Affiliation
Oral 1-8	Perspective projection Algorithm Enabling Mobile Device's Indoor Positioning	Jihyeok Yoon	Kyung Hee University
Oral 1-9	Feature Extraction for Automatic Speaking Proficiency Assessment Using a DNN-Based Speech Recognizer	Byeong-Yong Jang	Chungbuk National University
Oral 1-10	Packet Permutation PAPR Reduction for OFDM Systems Based on Luby Transform Codes	Dadi Bi	Xidian University
Oral 1-11	A Customized Authentication Design for Traffic Hijacking Detection on Hardware-Trojan Infected NoCs	Hui Guo	The University of New South Wales
Oral 1-12	Reliability analysis of crossed cube networks on degree	Litao Guo	Xiamen University of Technology
Oral 1-13	Malware Images Classification using Convolutional Neural Network	Espoir Kamundala Kabanga	Daegu University
Oral 1-14	Flow shop scheduling problem with convex resource allocation and learning effect	Chou-Jung Hsu	Nan Kai University of Technology

Computer Science & Communications: Technical Session 2

Session Chair: TBD

Subongkot, 3rd Floor, Arnoma Grand Bangkok   14:00-18:00, Saturday Afternoon, January 6, 2018

ID	Paper Title	Author	Affiliation
Oral 1-15	A Novel Terahertz Radiation Source Generated via Laser Magnetized-Plasma Interaction	Pallavi Jha	University of Lucknow
Oral 1-16	Improvements in a Puzzle Authentication Method	Yutaka Hirakawa	Shibaura Institute of Technology
Oral 1-17	Development of a platform to Explore Network Intrusion Detection System (NIDS) for Cybersecurity	Chan Chee Keong	Nanyang Technological University

Oral 1-18	Accuracy Analysis of Human Activity Recognition using Decision Tree-based Classification for Healthcare Internet of Things Services	Jung-Hyok Kwon	Department of Convergence Software, Hallym University
Oral 1-19	Test Matrices with the Specified Solution for Numerical Linear Algebra	Katsuhisa Ozaki	Shibaura Institute of Technology
Oral 1-20	Verification of Computational Order of Dot Product from the Behavior of Rounding Errors	Atsushi Sakamoto	Shibaura Institute of Technology
Oral 1-21	Accurate Numerical Solutions for Linear Systems and Adaptive Implementation	Ryota Ochiai	Shibaura Institute of Technology
Oral 1-22	Verification of Selection in Programming Codes for Problems of Rounding Errors	Yuki Ohta	Shibaura Institute of Technology
Oral 1-23	A Study on Diagnostic Assist Systems of Chronic Obstructive Pulmonary Disease from Medical Images by Deep Learning	Takashi Kawakami	Hokkaido University of Science
Oral 1-24	A Fundamental Study of a Computer Player Giving Fun to the Opponent	Yuki Takaoka	Hokkaido University of Science
Oral 1-25	Verification of non-singularity for interval matrices	Takeshi Terao	Shibaura Institute of Technology
16:00-16:20	**Coffee Break**		
Oral 1-26	A Performance Evaluation of Deep Learning Algorithms for Hammering Sound Inspection	Don Hiroshan Lakmal Balage	Gunma University
Oral 1-27	Software Architectural Design in Agile Environments	Mehdi Mekni	St. Cloud State University
Oral 1-28	Motion Localization with Optic Flow for Autonomous Robot Teams and Swarms	Donald Sofge	US Naval Research Laboratory

Oral 1-29	Research of Validity of the Vibration Measurement on Absolute Gravimeter Based on Interferometric technology	Zhenyu Xiong	College of Optoelectronic Science and Engineering National University of Defense Technology
Oral 1-30	Flood Susceptibility Analysis and Mapping Through Frequency Ratio Model	Sailesh Samanta	PNG University of Technology
Oral 1-31	A study on enhancement of decomposition method for detection of various land cover targets based on hybrid polarimetric parameters generated from RISAT-1 SAR images	Dheeraj Kumar	INDIAN INSTITUTE OF TECHNOLOGY (INDIAN SCHOOL OF MINES) DHANBAD
Oral 1-32	A Study on Urban Flood through the Heavy Rain Trend and Management System	MinKyung CHO	Sungkyunkwan Universty
Oral 1-33	A study on Forest Fire Assessment using GIS technology	Shin Jeong Hoon	Sungkyunkwan Universty
Oral 1-34	Analysis of forest fire damage risk through forest fire prediction simulation	Kuyoon Kim	Sungkyunkwan Universty
Oral 1-35	A Study on Seoul's flood monitoring system, change of approach and direction	Jooiee Yoon	Sungkyunkwan Universty
Oral 1-36	Real-time Red Tide Detection Method for Coastal Monitoring	SeokBum Hong	Sungkyunkwan Universty
Oral 1-37	Google Earth Engine Based Three Decadal Landsat Imagery Analysis for Mapping of Mangrove Forests and its Surroundings in the Trat Province of Thailand	Uday PIMPLE	King Mongkuts University of Technology Thonburi Thailand
Poster 1-38	Drought monitoring of the Korean Peninsula using hydrological drought index based on GRACE satellites data	Jae Young Seo	Dongguk University

Computer Science & Communications: Invited & Technical Session 3

Session Chair: Prof. Miran Mozetič, Jozef Stefan Institute, Slovenia

Thip-Ubol, 3rd Floor, Arnoma Grand Bangkok   08:00-12:00, Sunday Morning, January 7, 2018

ID	Paper Title	Author	Affiliation
Invited 08:00-08:30	Remote Sensing Technologies for Planetary Exploration: Examples from Recent Rovers on Mars	Prof. Jim Bell	Arizona State University
Invited 08:30-09:00	Extreme nonlinear THz Optics – from absorption bleaching to high-order harmonics	Prof. Tsuneyuki Ozaki	Institut national de la recherche scientifique
Invited 09:00-09:30	Toward miniaturized integrated andlow-cost circulators and Isolators	Prof. Vincent LAUR	Laboratoire Lab-STICC
Invited 09:30-10:00	BIOMEDICAL T-RAY IMAGING - A NON-HAZARDOUS TECHNIQUE IN EARLY DETECTION OF MALIGNANT TUMOR	Prof. M Mukherjee	ADAMAS UNIVERSITY
10:00-10:20	**Coffee Break**		
Invited 10:20-10:50	Application of Microwave Technologies to Improve Biocompatibility of Cardiovascular Implants	Prof. Miran Mozetič	Jozef Stefan Institute
Oral 1-39	Microwave characterization of Activated Carbons	Fatma Shkal	Cardiff University
Oral 1-40	CMOS Active Circulators	Sen Wang	National Taiwan University of Technology
Oral 1-41	Magnetic Field Variations of Microwave Refractive Index	Anatoly Rinkevich	Institute of Metal Physics
Oral 1-42	The coal's layer temperature regime under conditions of heat removal of absorbed microwave energy by radiation and convection simultaneously	Vadim Karelin	Siberian Branch of the Russian Academy of Sciences

Medicine & Healthcare: Invited &Technical Session 1

Session Chair: Dr. Hyun-Duck Kim, Seoul National University School of Dentistry, South Korea

Pathummas, 3rd Floor, Arnoma Grand Bangkok 08:00-12:00, Saturday Morning, January 6, 2018

ID	Paper Title	Author	Affiliation
Invited 08:00-08:30	Could hypertension reduce periodontitis?	Dr. Hyun-Duck Kim	Dept. of Preventive and Social Dentistry School of Dentistry Seoul National University
Invited 08:30-09:00	ALTERNATIVE MEDICINE	Dr. Pradeep Tangade	Department of Public Health Dentistry
Invited 09:00-09:30	Endophytic Microbes: An untapped source of Pharmacological Bioactive Potent Moieties	Dr. Muhammad Shahid	University of Agriculture
Invited 09:30-10:00	TBD	Dr. Itamar Shabtai	College of Management
10:00-10:20	**Coffee Break**		
Oral 2-1	Implements Assessment and Secondhand Smoke Exposure at Hospitals, Schools and Public Transportation Vehicles in Guangdong, China: a repeat cross-sectional study	Qian Yi	School of Public Health
Oral 2-2	South African health care workers knowledge and attitude towards cervical cancer and Human Papillomavirus vaccine	Muhammad Hoque	University of KwaZulu-Natak
Oral 2-3	Public health and preventive medicine: a new target for occupational medicine in France in territorial collectivities	RAPHAEL SERREAU	Université Léonard de Vinci Paris
Oral 2-4	TOBACCO CESSATION - GAINING MOMENTUM	Ipseeta Menon	ITS DENTAL COLLEGE
Oral 2-5	NERVE LATERALIZATION IN SIMULTANEOUS DENTAL IMPLANT PLACEMENT	Harsha Jain	ITS DENTAL COLLEGE

ID	Paper Title	Author	Affiliation
Oral 2-6	Protective effect of fermented Angelica tenuissimae extract on photoaging via Nrf2/HO-1 antioxidant pathway	Eun-Hwa Sohn	Kangwon National University
Oral 2-7	Differences in Injury Mechanism and Disposition According to Gender, Among Head and Neck Injury Patients Visiting the Emergency Department	Sungwoo Moon	Korea Univ Ansan Hospital
Oral 2-8	Assessment of Dental Caries and Nutritional Status among School Children of Kathmandu Valley	Sujita Shrestha	Kantipur Dental College & Teaching Hospital
Oral 2-9	Prevalence of metabolic syndrome and metabolic components and individual component combinations and risk factors of metabolic syndrome (MS) according to hypertension status in Tibetans	JIHONG HU	Gansu University of Traditional Chinese Medicine

Medicine & Healthcare: Invited &Technical Session 2

Session Chair: Dr. Manjubala Dash, Mother Theresa Post Graduate and Research Institute of Health sciences, India

Pathummas, 3rd Floor, Arnoma Grand Bangkok   14:00-18:00, Saturday Afternoon, January 6, 2018

ID	Paper Title	Author	Affiliation
Invited 14:00-14:30	Biomarkers in preeclampsia: how can they may help to understand the syndrome	Prof. Valeria Sandrim	Universidade do Estado de São Paulo
Invited 14:30-15:00	The Maternal fetal interaction in the ABO Blood group system: A comparative analysis of healthy mother and couples with spontaneous abortion in Bengalee population	Prof. Arup Ratan Bandyopadhyay	UNIVERSITY OF CALCUTTA
Invited 15:00-15:30	Quality management in IVF - the Australian experience	Prof. Michael Chapman	University of London
Invited 15:30-16:00	Induction of labour in low-risk women: Is 39 the new 41?	Prof. Rohan D'Souza	Mount Sinai Hospital
16:00-16:20	**Coffee Break**		

ID	Paper Title	Author	Affiliation
Oral 2-10	JNJ-26481585 suppresses tumor growth via c-Myc/Bmi-1/p21cip 1 pathway in ovarian cancer	Hua Zhou	Affiliated Hospital of Guizhou Medical University
Oral 2-11	Effects of different vitrification-warming methods on blastocyst survival rates and clinical outcomes	Hua Zhou	Affiliated Hospital of Guizhou Medical University
Oral 2-12	Telomeres and Female Reproduction	Hua Zhou	Affiliated Hospital of Guizhou Medical University
Oral 2-13	The Effectiveness Crocus sativus L. (Saffron) on Sexual Dysfunction in Women at Reproductive Ages	Fatemeh Rahimikian	Tehran University of Medical Sciences
Oral 2-14	Clinical Characteristics of Vaginal Discharge Associated Streptococcus pyogenes at General Japanese Hospital	Masaaki Minami	Nagoya City University
Poster 2-15	DEERS (Diseases of Endometrium-Evaluation & Risk Scoring): A Novel tool for Screening Endometrial Pathology	Deeksha Pandey	KMC Manipal, MAHE
Oral 2-16	Moleculo-genetic mechanisms of erythropoietin treatment in vitro spinal cord injury model	Chang Ho Hwang	University of Ulsan College of Medicine

Medicine & Healthcare: Invited &Technical Session 3

Session Chair: Prof. Bernard M Y Cheung, University of Hong Kong, Hong Kong (China)

Subongkot, 3rd Floor, Arnoma Grand Bangkok   08:00-12:00, Sunday Morning, January 7, 2018

ID	Paper Title	Author	Affiliation
Invited 08:00-08:30	Breastfeeding : The Birth Right of Baby	Dr. Manjubala Dash	Mother Theresa Post Graduate and Research Institute of Health sciences
Invited 08:30-09:00	VITAMIN D DEFICIENCY : A CONCERN FOR BANGLADESHI CHILDREN	Prof. Mohammad Salim Shakur	United Hospital Limited

ID	Paper Title	Author	Affiliation
Invited 09:00-09:30	What does the meta-analysis of randomized controlled trials tell us about the optimal duration of dual antiplatelet therapy?	Prof. Bernard M Y Cheung	University of Hong Kong
Invited 09:30-10:00	New paradigms of molecular therapy for inherited cardiovascular conditions	Prof. Dhavendra Kumar	Cardiff University
10:00-10:20	**Coffee Break**		
Invited 10:20-10:50	TBD	Prof. Asadi-Shekaari M	Kerman University of Medical Sciences
Oral 2-17	The Use of Probiotics to Minimize Respiratory Tract Infections Incidence in Children: A Meta-Analysis	Leonirma Tengguna	Bergerak Badau Hospital
Oral 2-18	Primary School Admission Age and School Performance	GAO Zheng	National University Hospital
Oral 2-19	Intraosseous Administration of Adrenaline does not impair uptake of a Subsequent Injection in Hypovolemic Shock	Mats Eriksson	Uppsala University Hospital
Oral 2-20	Advanced Drug Induced Liver Injury Probably Due to Tolvaptan in a Patient with Acute Heart Failure	SATOMI FUJIWARA	SEN-EN RIFU HOSPITAL
Oral 2-21	A Method for Normal Direction Judge Applied in Electrocardiographic Problem	ChengCheng Tang	Tsinghua University
Poster 2-22	Clinical characteristics of enteroviral meningitis without pleocytosis in children	JI SOOK LEE	Ajou University School of Medicine

Medicine & Healthcare: Invited &Technical Session 4

Session Chair: Prof. Keith R Pennypacker, University of Kentucky, USA

Pathummas, 3rd Floor, Arnoma Grand Bangkok   08:00-12:00, Sunday Morning, January 7, 2018

ID	Paper Title	Author	Affiliation
Invited 08:00-08:30	Genetically modified monkey models of neurological disorders	Prof. Xiao-Jiang Li	Emory University, Atlanta

Invited **08:30-09:00**	Age-related Differences in the Response to Leukemia Inhibitory Factor after Experimental Stroke	Prof. Keith R Pennypacker	University of Kentucky
Invited **09:00-09:30**	Spinal subpial AAV9 and cell delivery for treatment of neurodegenerative disorders	Prof. Martin Marsala	University of California
Invited **09:30-10:00**	Glial Function in polyglutamine expansion-mediated neurodegeneration	Prof. Shi Hua Li	Emory University United States
10:00-10:20	**Coffee Break**		
Invited **10:20-10:50**	The challenge of comorbidities, aging and pregnancy to the protection of the heart against ischemia/reperfusion injury	Dr. Fawzi A. Babiker	Kuwait University
Oral **2-23**	Visualization and Quantitative Analysis of the Brain Interstitial Space Based on MR tracer method	Ze Teng	Dept. of Radiology, Peking University Third Hospital
Oral **2-24**	Electroencephalographic change of non-affected side of hemimegalencephaly and developmental progress after hemispherotomy	Eiji Nakagawa	National Center Hospital
Oral **2-25**	Efficacy of Coenzyme Q10 as Migraine Prophylaxis: A Systematic Review	Hanna Karmila	Bergerak Badau Hospital
Poster **2-26**	Characteristics of Restless Legs Syndrome Patients with Very Low Ferritin	Tae-Joon Kim	Seoul National University Hospital

Part IV   Abstracts

Computer Science & Communications: Technical Session 1

ID: WCSIP2018_10001
Title: Passive Localization Using Time Difference of Arrival and Frequency Difference of Arrival
Name: Xiansheng Guo
Affiliation: University of Electronic Science and Technology of China
Email: xsguo@uestc.edu.cn

Abstract:
In order to improve the accuracy and engineering feasibility of four-Satellite localization system, the frequency difference measurement is introduced to the four-Satellite TDOA (Time Difference of Arrival) localization algorithm. The TDOA/FDOA (Frequency Difference of Arrival) localization algorithm is used to optimize the GDOP (geometric dilution of precision) of four-Satellite localization. The simulation results show that the absolute position measurement accuracy has little influence on TDOA/FDOA localization accuracy as compared with TDOA localization. Under the same conditions, TDOA/FDOA localization has better accuracy and its GDOP shows more uniform distribution in diamond configuration case. The localization accuracy of four-Satellite TDOA/FDOA is better than the localization accuracy of four-Satellite TDOA.

ID: WCSIP2018_10002
Title: Task-specific Gait Analysis: Faller Versus Non-faller Comparative Study
Name: Rami Alkhatib
Affiliation: Rafik Hariri University
Email: khatibrh@rhu.edu.lb

Abstract:
In this paper, a comparative analysis of walking patterns during different cognitive states is conducted, followed by the classification of our database into Fallers and Non-fallers; by Fallers we describe subjects with repeated falling history. Vertical Ground Reaction Forces (VGRF) acquired from underneath the heel and toes of both feet are processed and analyzed for that endeavor. The subjects underwent three levels of tasks: (a) Single task: Walking at self-selected-speed (MS), (b) Dual task: Walking while performing a verbal fluency task (MF) and (c) Complex Dual task: Walking while counting backwards (MD).The ultimate objective of our research is fall prediction among the elderly by characterizing the variation of time-domain feature of Gait signals. For that, walking VGRF is analyzed and tested for the existence of indicators of the effect of dual task on subject falling susceptibility, whether parametric or pattern-wise analysis. As a result to our work, dual task in Fallers VGRF signals were recognized at 74% while at those non-fallers were recognized at 85%. Most importantly, subjects with history of fall have shown more potential to change the way they walk while performing mathematical cognitive task.

ID: WCSIP2018_10003
Title: Individual Identification Using ECG Signals
Name: Mohamad Diab
Affiliation: Rafik Hariri University
Email: diabmo@rhu.edu.lb

Abstract:
The electrocardiogram (ECG) signal used for diagnosis and patient monitor-ing, has recently emerged as a biometric recognition tool. Indeed, ECG signal changes from one person to another according to health status, heart geometry and anatomy among other factors. This paper forms a comparative study be-tween different identification techniques and their performances.

Previous works in this field referred to methodologies implementing either set of fiduci-al or a set non-fiducial features. In this study we show a comparison of the same data using a fiducial feature set and a non-fiducial feature set based on statistical calculation of wavelet coefficient. High identification rates were measured in both cases, non-fiducial using Discrete Meyer (dmey) wavelet outperformed the rest at 98.65

ID: WCSIP2018_10006
Title: Effects of JPEG Compression on Reading Optical Watermarking Embedded by Using Color–difference Modulation

Name: Kazutake Uehira
Affiliation: Kanagawa Institute of Technology
Email: uehira@nw.kanagawa-it.ac.jp

Abstract:

In this paper, we evaluate the readability of optically written watermarking from an image compressed by JPEG. We previously proposed an optical watermarking tech-nique that can protect the portrait rights of real objects. It produces a watermarking pattern in the illumination light by modulating color differences. The illumination light that contains such watermarking is projected onto an object. An image of the object taken by a camera contains the same watermarking, which can be extracted by image processing. Therefore, this technique can protect the portrait rights of real objects. We conducted simulations of capturing an object image illuminated by watermarked light, compressing it by JPEG, and reading embedded information from the decoded image. The simulation results showed that the accuracy in reading out embedded information decreases when captured images are compressed. However, for medium-level or low compression rates 100% accuracy can be expected by using the error correction tech-nique.

ID: WCSIP2018_10007
Title: Real time power monitoring detection based on Sequence Time Domain Reflectometry Approach

Name: Mahmoud Alahmad
Affiliation: University of Nebraska-Lincoln
Email: malahmad2@unl.edu

Abstract:

Sequence Time Domain Reflectometry (STDR) have been demonstrated to be a pow-erful technique for detecting the length of cable or length of open circuit or short circuit cables. Using this method along with using smart meter on the main electrical panel board to monitor consumption if load at each circuit, enable user to monitor power consumption at each node (power outlet) only by operating a smart digital meter and an STDR circuitry on each circuit at the main electrical panel board. This paper intro-duces this method and examines it on dead-wire and energized wire with a load con-nected across it. Experimental results are demonstrated for both types. Test result show the potential application of this approach to provide consumption information and potential cost saving via feedback for users.

ID: WCSIP2018_10017
Title: A 3D source Fingerprinting-based Localization system

Name: Nadia ALOUI
Affiliation: Laboratoire d'acoustique de l'université du Maine LAUM
Email: nadia.aloui@univ-lemans.fr

Abstract:

In recent years, indoor localization becomes more and more essential in our daily life thanks to its interesting applications that cover all domains including security, tourism. Several researches are then focalized on the proposol of indoor localization systems that are challenging the indoor environments. In our work, we propose a 3D fingerprinting-based localization system that estimates a source position using acoustic signals. The choice of acoustic signals is motivtated by the fact that such signals are used in almost roaming devices. We can then reuse the existing infrastructures for indoor purposes. The proposed system has been evaluated in

experimental tests in an area of dimensions 1.5 m * 1.5 m * 2 m when four microphones were placed at known positions and an artificial fan is turned on. Results show that turbulence affects the precision of estimating the source position by 7% for an accuracy of 8.5 cm.

ID: WCSIP2018_10016
Title: View direction adaptive 360 degree video streaming system based on projected area

Name: San Kim
Affiliation: College of electronics and information, Kyung-hee university
Email: kimsan0622@gmail.com

Abstract:
360 video streaming services over the network are becoming popular. In particular, it is easy to experience 360 video through the already popular smartphone. However, due to the nature of 360 video, it is difficult to provide stable streaming service in general network environment because the size of data to send is larger than that of conventional video. Also, the real user's viewing area is very small compared to the sending amount. In this paper, we propose a system that can provide high quality 360 video streaming services to the users more efficiently in the cloud. In particular, we propose a streaming system focused on using a head mount display (HMD).

ID: WCSIP2018_10013
Title: Perspective projection Algorithm Enabling Mobile Device's Indoor Positioning

Name: Jihyeok Yoon
Affiliation: Kyung Hee University
Email: ychwh555@khu.ac.kr

Abstract:
In order to improve the user's satisfaction with the augmented reality(AR) technology and the accuracy of the service, it is important to obtain the exact position of the user. Frequently used techniques for finding

outdoors locations is the global positioning system (GPS), which is less accurate indoors. Therefore, an indoor position is meas-ured by comparing the reception level about access point(AP) signal of wireless fideli-ty (Wi-Fi) or using bluetooth low energy(BLE) tags. However, Wi-Fi and Bluetooth require additional hardware installation. In this paper, the proposed method of esti-mating the user's position uses an indoor image and indoor coordinate map without additional hardware installation. The indoor image has several feature points extracted from fixed objects. By matching the feature points with the feature points of the user image, we can obtain the position of the user on the Indoor map by obtaining six or more pixel coordinates from the user image and solving the solution using the per-spective projection formula. The experimental results show that the user position can be obtained more accurately in the indoor environment by using only the software without additional hardware installation

ID: WCSIP2018_10019
Title: Feature Extraction for Automatic Speaking Proficiency Assessment Using a DNN-Based Speech Recognizer

Name: Byeong-Yong Jang
Affiliation: College of Electrical and Computer Engineering, Chungbuk National University
Email: byjang@cbnu.ac.kr

Abstract:
We analyze correlation between the rater's score of speaking proficiency assessment and the features extracted by using a speech recognizer. Based on the analysis results, we propose to use a deep neural network (DNN)-based speech recognizer to improve the performance of automatic speaking proficiency assessment. The structure of an automatic speaking proficiency assessment system is shown in Fig 1. We compute the correlation between the rater's score and the extracted features when Gaussian mixture model (GMM) or DNN are used as an acoustic model of the speech recognizer. The correlation coefficient of 15

fluency features (speech rate, articulation rate, filled/unfilled pause rate, and so on) is proportional to the speech recognition performance regardless of the acoustic model type. Unlike fluency features, 2 pronunciation features (goodness of pronunciation, acoustic model score) are affected by the type of acoustic model. Whereas the correlation coefficient between the rater's score and the acoustic model score ('amscore') feature extracted from the GMM is 0.24, the corresponding correlation coefficient obtained from the DNN is shown to be 0.77. This is larger than the correlation coefficient 0.61 obtained from the goodness of pronunciation (GOP) feature often used for pronunciation assessment traditionally. Table 1 presents the correlation coefficient between pronunciation features and rater's score. Accordingly, we compute the output score of an automatic speaking proficiency assessment system using a linear regression model with fluency and pronunciation features. To evaluate the validity of the proposed method, we perform the correlation analysis between the output score and the rater's score. Table 2 presents the correlation coefficient between the output score and rater's score. As a result, the 'amscore' extracted from the DNN-based acoustic model is shown to increase the correlation coefficient from 0.76 to 0.83. Other features except 'amscore', do not yield performance improvement even though they have a high correlation coefficient with the rater's score.

ID: WCSIP2018_10018
Title: Packet Permutation PAPR Reduction for OFDM Systems Based on Luby Transform Codes
Name: Dadi Bi
Affiliation: Xidian University
Email: ddbi@stu.xidian.edu.cn

Abstract:
In this paper, we present a novel signal candidate generation method and propose a new joint coding and probability peak to average power ratio (PAPR) reduction scheme for a Luby transform (LT) coded orthogonal frequency division multiplexing (OFDM) system. When a few LT packets are mapped into an OFDM symbol, all sub-carriers are automatically divided into several blocks. We permutate this packets and assign them different subcarrier blocks to generate different signal candidates instead of multiplying by many phase rotation vectors and using active constellation exten-sion, and the transmitted symbol will be the one whose PAPR is the smallest. Also, we introduce one phase rotation vector to further reduce PAPR. Simulation results prove that our proposed scheme can obtain effective PAPR reduction performance. Since the permutation operation does not change the degree value of each packet, the new scheme can still maintain good decoding performance.

ID: SCAH2018_10000
Title: A Customized Authentication Design for Traffic Hijacking Detection on Hardware-Trojan Infected NoCs
Name: Hui Guo
Affiliation: The University of New South Wales
Email: huig@cse.unsw.edu.au

Abstract:
Traffic hijacking is a common attack perpetrated on networked systems, where attackers eavesdrop on user transactions, manipulate packet data, and divert traffic to illegitimate locations. Similar attacks can also be unleashed in a NoC (Network on Chip) based system where the NoC comes from a third-party vendor and can be engrafted with hardware Trojans. Unlike the attackers on a traditional network, those Trojans are usually small and have limited capacity. This paper targets such a hardware Trojan; Specifically, the Trojan aims to divert traffic packets to unauthorized locations on the NoC. To detect this kind of traffic hijacking, we propose an authentication scheme in which the source and destination addresses are tagged. We develop a custom design for the packet tagging and authentication such that the implementation costs can be greatly reduced. Our experiments on a set of applications show that on average the detection circuitry incurs about 3.37% overhead in area, 2.61% in power, and 0.097% in

performance when compared to the baseline design.

ID: SCAH2018_10001
Title: Reliability analysis of crossed cube networks on degree

Name: Litao Guo
Affiliation: Xiamen University of Technology
Email: ltguo2012@126.com

Abstract:
Crossed cubes network is a kind of interconnection structure as a basis for distributed memory parallel computer architecture. Reliability takes an important role in fault tolerant computing on multiprocessor systems. Connectivity is a vital metric to explore fault tolerance and reliability of network structure based on a graph model. Let $G = (V,E)$ be a connected graph. The

k-conditional edge connectivity $\lambda^k(G)$ is the cardinality

of the minimum edge cuts F, if any, whose deletion disconnects G

and each component of $G - F$ has property of minimum degree δ

$\geq k$. The k-conditional connectivity $\kappa^k(G)$ can be

defined similarly. In this paper, we determine the k-conditional

(edge) connectivity of crossed cubes CQ_n for small k. And we

also prove other properties of CQ_n.

ID: SCAH2018_10002
Title: Malware Images Classification using Convolutional Neural Network

Name: Espoir Kamundala Kabanga
Affiliation: Daegu University
Email: kabanga@daegu.ac.kr

Abstract:
Deep learning has been recently achieving a great performance for malware classification task. Several research studies such as that of converting malware into gray-scale images have helped to improve the task of classification in the sense that it is easier to use an image as input to a model that uses Deep Learning's Convolutional Neural Network. In this paper, we propose a Convolutional Neural Network model for malware image classification that is able to reach 98% accuracy

ID: SCAH2018_10005
Title: Flow shop scheduling problem with convex resource allocation and learning effect

Name: Chou-Jung Hsu
Affiliation: Nan Kai University of Technology
Email: jrsheu@nkut.edu.tw

Abstract:
In this paper, we consider the no-wait two-machine scheduling problem with convex re-source allocation and learning effect under the condition of common due date assignment. We take the total earliness, tardiness and common due date cost as the objective function, and find the optimal common due date, the resource allocation and the schedule of jobs to make the objective function minimum under the constraint condition that the total resource is limited. The corresponding algorithm is given and proved that the problem can be solved in polynomial time.

Computer Science & Communications: Technical Session 2

ID: ICMTT2018_10005
Title: A Novel Terahertz Radiation Source Generated via Laser Magnetized-Plasma Interaction
Name: Pallavi Jha
Affiliation: Department of Physics, University of Lucknow
Email: prof.pjha@gmail.com

Abstract:
The propagation of ultrashort (~fs), high power (~TW) laser pulses, in plasma, is relevant to a wide range of applications such as laser-plasma based accelerators [1], selfchanneling [2], harmonic generation [3, 4], laser fusion schemes [5] and Terahertz (THz) radiation sources [6-9]. THz radiation is of great current interest owing to its ability to nondestructively analyze a wide range of materials in detail and finds applications in the field of medical imaging, material characterization, explosive detection, outer space communication and homeland security. Traditional laser based THz emitters like electrooptic crystals etc., when irradiated with high power laser pulses, are subject to low conversion efficiencies and material breakdown. This problem is not encountered in plasma based THz radiation sources, since plasma is impervious to material breakdown and has the potential of high power THz emission. The present study is devoted to an analytical and simulation study of THz radiation generation due to wakefields produced by propagation of short, linearly polarized laser pulses in homogeneous, magnetized plasma. The uniform magnetic field is applied along the direction perpendicular to both, the electric vector as well as the direction of propagation of the laser pulse. The plasma is assumed to be cold so that before the passage of the laser pulse, the plasma electrons are at rest and the magnetic field does not affect them. When the laser pulse propagates in plasma, the presence of the magnetic field affects the dynamics of the plasma electrons which in turn leads to the generation of transverse electric and magnetic fields that are equal in magnitude and mutually perpendicular. These fields oscillate at the plasma frequency which lies in the THz range, thus leading to THz radiation generation.

ID: CiSE2018_10007
Title: Improvements in a Puzzle Authentication Method
Name: Yutaka Hirakawa
Affiliation: Shibaura Institute of Technology
Email: hirakawa@shibaura-it.ac.jp

Abstract:
This article discusses improvements in a puzzle authentication method that adopts the interface of the Puzzle and Dragons game [1] and is tolerant against video-recording attacks. A problem that the conventional puzzle authentication methods face is that they are time consuming and have low success rate in authentication. We evaluated improvements of the interface to verify the usability of the improved system. The results suggested that the usability in terms of operation time and authentication success rate attained a level that was comparable with other leading methods in the field.

ID: CiSE2018_10009
Title: Development of a platform to Explore Network Intrusion Detection System (NIDS) for Cybersecurity
Name: Chan Chee Keong
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Abstract:
Cybersecurity is increasing its significance in recent years due to the overwhelming use of devices which require the use of internet. This raises the importance of having cybersecurity training for the upcoming generations as hackers continue to upgrade their methodologies and techniques to obtain important information such as personal identification, credit card

numbers etcetera. This paper describes the development of a platform for students to learn how to setup and use a Network Intrusion Detection System in a virtual environment. In this environment, the administrator of a specific system can monitor and detect their network for any malicious activity. We will discuss in this paper the network configuration setup via virtualisation technology followed by having a Network Intrusion Detection System installed in one of the virtual machines port mirrored to monitor the whole network. In the virtual network, a virtual machine will be assigned as an attacker to simulate cyber-attacks allowing the Network Intrusion Detection System to detect the Internet Protocol (IP) address from the source of malicious activity provider. In addition, students will have the opportunity to learn how to write basic rules for the Network Intrusion Detection System which are algorithms used to detect cyber malicious movements.

ID: CiSE2018_10010

Title: Accuracy Analysis of Human Activity Recognition using Decision Tree-based Classification for Healthcare Internet of Things Services
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Abstract:
This paper presents an accuracy analysis of human activity recognition (HAR) using decision tree-based classification for healthcare Internet of things (IoT) services. The HAR technology has been widely used in healthcare IoT services, since it provides information of the personal behavior to real life applications primarily dealing with activities of daily living, medication, and eldercare. In such applications, the HAR should recognize the human activity exactly, thus its accuracy is considered the most important criterion of HAR performance. For accuracy, the big data analysis techniques are generally used for HAR. Especially, the decision tree is considered one of the primary

techniques for HAR due to its simplicity and ease of understand. In this paper, we analyze the accuracy of the HAR using decision tree-based classification through experimental implementation. To this end, we develop the prediction model for human activity using R Studio version 1.0.153, and conduct the experiment with various scenarios to investigate the variation of the accuracy. More specifically, we vary the size of training and test datasets that consist of data randomly sampled from the entire dataset. For the dataset, we use the localization data collected form the multiple on-body sensors, provided by UCI repository. The experiment results show that the large size of training dataset and small size of test dataset tend to result in high accuracy.

ID: CiSE2018_10015

Title: Test Matrices with the Specified Solution for Numerical Linear Algebra
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Abstract:
Herein, test matrices for numerical computations, particularly linear systems and eigenvalue problems, are investigated. An approximate result, i.e. the results computed by floating-point arithmetic, can be inaccurate, because the given problem ill-conditioned or the program code is incorrect. If the given problem is well conditioned and the computed result is inaccurate, the program code is usually incorrect. If a solution of the problems is known beforehand, it is useful to check the correctness of programs. Herein, a method that produces a coefficient matrix A, a solution vector x and a right-hand side vector b using error-free transformation of floating-point arithmetic is proposed, where A, x and b can be represented by floating-point numbers and Ax=b is satisfied. The computational cost is negligible in multiple cases compared to that involved in solving linear systems. For eigenvalue problems, the proposed method produces a matrix and its exact eigenvalues based on the Jordan normal form.

The cost of the proposed method is considerably lesser than that of matrix multiplication. Numerical examples illustrate that the proposed approach is useful in verifying the accuracy of numerical solutions.

ID: CiSE2018_10018

Title: Verification of Computational Order of Dot Product from the Behavior of Rounding Errors

Name: Atsushi Sakamoto
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Abstract:
Herein, test examples for checking the computational order of the dot product and matrix multiplication are considered. A user writes a particular code and compiles it. The compiler may change the order of computations via optimization. This may not be expected for the user. For example, let a,b and c be floating-point numbers. If we evaluate (a+b)+c and (a+c)+b using floating-point arithmetic, the computed results can be different due to rounding errors. The Basic Linear Algebra Subprograms (BLAS) specification is used for numerical linear algebra. The Intel Math Kernel Library and Open BLAS are well known as BLAS. If the codes are not open source or we only download th binary files, then information of the computational order usually remains unknown. We introduce several examples that clarify the order of computations for the dot product and matrix multiplication. Additionally, we propose a method to verify the preload and postload orders for the routines "dot" and "gemm" in BLAS from the behaviour of rounding errors. Even if the code is not open source, the preload or postload order can be verified from the computed results using our examples.

ID: CiSE2018_10017

Title: Accurate Numerical Solutions for Linear Systems and Adaptive Implementation

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Abstract:
Linear systems appear in a variety of fields in scientific computing. Hence, there are a number of methods and implementations for solving the linear systems. If a program code is incorrect or a problem is ill-conditioned, then inaccurate results can be obtained. The goal is to generate test examples for checking the correctness of codes and the accuracy of numerical methods. We propose methods for liner the systems which produce computed results called "faithful rounding" and "rounding to the nearest". The concept of the faithful rounding was proposed by Rump, Ogita and Oishi. It represents one of the immediate floating-point neighbors of an exact result. Rounding to the nearest floating-point number means that the accuracy of the computed result is the best. If such accurate numerical solutions can be obtained, they prove useful in checking the correctness of program codes and the accuracy of approximate solutions. Finally, we introduce an adaptive implementation of the proposed methods.

ID: CiSE2018_10016

Title: Verification of Selection in Programming Codes for Problems of Rounding Errors

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Abstract:
This paper analyses the comparison of two results computed via a programming code. In structured programming, selection is a statement, which frequently appears in programming codes as if--then--else--endif. There are two computed values, namely, a and b. We assume that ab can then be satisfied. In this case, an incorrect statement is executed in the if-statement. We propose a floating-point filter for the computed results. The floating-point filter provides conditions that are sufficient for the comparison of the

two computed results, which can be checked only by using floating-point arithmetic. If the rounding error analysis of the problems is known, the floating-point filter can be generated automatically by the proposed method.

ID: CiSE2018_10012
Title: A Study on Diagnostic Assist Systems of Chronic Obstructive Pulmonary Disease from Medical Images by Deep Learning

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Abstract:
In this paper, we propose new diagnostic assist systems of medical images using deep learning algorithms. Specifically, we aim to develop a diagnostic support system for the very early stage of chronic obstructive pulmonary disease (COPD) based on the CT images. It is said that COPD is a disease that develops due to long-term smoking, and it is said that there are a large number of latent onset reserve forces. By discovering this COPD in the very early period 0 and improving the living conditions, subsequent severity can be avoided in many cases, so a system that will help diagnosis by radiologists is needed. We show the some experimental results examined by the constructed system.

ID: CiSE2018_10013
Title: A Fundamental Study of a Computer Player Giving Fun to the Opponent

Name: Yuki Takaoka
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Abstract:
In this research, we aim to create a computer player that gives fun to the opponent. Research on game AI has spread widely in recent years, and many games are being studied. Some of those studies have made remarkable results. Game research is aimed at strengthening computer players. However, it is unknown whether a computer player who is too strong is good. There may also be opponents who think that a computer player is not interesting if it is too strong. Therefore, we thought whether we could create a computer player who entertain the opponent while maintaining a certain degree of strength. To realize this idea, we use the Monte Carlo Tree Search. We tried to create a computer player that gives fun to the opponent by improving the Monte Carlo Tree Search. As a result of some experiments, we succeeded in giving fun, although it was a first step. On the other hand, many problems were found through experiments. In future, it is necessary to solve these problems.

ID: CiSE2018_10019
Title: Verification of non-singularity for interval matrices

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Abstract:
Floating-point numbers are used in several programming languages. These are finite precision numbers with binary representation. If a value cannot be represented by floating-point numbers, intervals are useful for this problem. In this study, we focus on linear systems with an interval coefficient matrix and an interval right-hand side vector. Verifying the non-singularity of the interval matrix in this problem is important. We focus on this problem and propose fast verification methods based on LU decomposition. The cost of the proposed method is 2-5 times higher than that of LU decomposition.

ID: CiSE2018_10004
Title: A Performance Evaluation of Deep Learning Algorithms for Hammering Sound Inspection

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Abstract:

The purpose of this study is to identify defective products of "door striker" in automobile industry. Mainly by identifying the difference of their hammering sound wave characteristics between defective and acceptable products, the products can be classified with the non-destructive way. The patterns of all these wave forms are almost the same and cannot perform the classification by using statistical approach. Hence the research is conducted by using Deep Learning Algorithms. For comparison, different kinds of Deep Learning Algorithms are used after identifying their capabilities by studying their various applications. The experimental results show that the combination of Wavelet transformation of hammering sounds and Deep Convolutional Neural Network attained 100% accuracy for the inspection against the given actual data set. The necessary time for inspection is one second, therefore the suggested combination is available for the real-time inspection connected with the door striker manufacturing equipment. As for other cases, the Stacked Auto Encoder occasionally attained 100% accuracy, however, this unstable performance is not practical. The results of this research can be used to reveal which Deep Learning Algorithms having best capabilities with this kind of applications too. The findings may directly apply to not only the automobile industry but any other manufacturing industries to increase the product quality. As future work, the suggested approach should be applied to other non-destructive hammering sound inspection problems.

ID: CiSE2018_10008
Title: Software Architectural Design in Agile Environments
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Abstract:

In this paper, we propose a novel methodology to guide and assist practitioners supporting software architecture and design activities in agile environments. Software architecture and design is the skeleton of a system. It defines how the system has to behave in terms of different functional and non-functional requirements. Currently, a clear specification of software architectural design activities and processes in agile environments does not exist. Our methodology describes in detail the phases in the agile software design process and proposes techniques and tools to implement these phases.

ID: CiSE2018_10011
Title: Motion Localization with Optic Flow for Autonomous Robot Teams and Swarms
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Abstract:

The ability to localize moving objects within the environment is critical for autonomous robotic systems. This paper describes a moving object detection and localization system using multiple robots equipped with inexpensive optic flow sensors. We demonstrate an architecture capable of detecting motion along a plane by collecting three sets of one-dimensional optic flow data. The detected object is then localized with respect to each of the robots in the system.

ID: ICRSTA2018_10009
Title: Research of Validity of the Vibration Measurement on Absolute Gravimeter Based on Interferometric technology
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Abstract:

We present an experimental study on the vibration

measurement of fixed corner cube of the absolute gravimeter based on interferometry and PGC demodulation technology. Simulation of demodulation algorithm has verified its validity. Vertical and horizontal experiments have been done to testify the feasibility of this study. And it is proved that this interferometer can operate well as expected.

ID: ICRSTA2018_10001

Title: Flood Susceptibility Analysis and Mapping Through Frequency Ratio Model

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Abstract:

Papua New Guinea (PNG) is saddled with frequent natural disasters like earthquake, volcanic eruption, landslide, drought, flood etc. Flood, as a hydrological Disaster to humankind's niche brings about a powerful and often sudden, pernicious change in the surface distribution of water on land. While the benevolence of flood manifests in restoring the health of the thalweg from excessive siltation by redistributing the fertile sediments on the riverine floodplains. Flood is one of the most devastating disaster in respect to social, economic and environmental consequences in PNG. The aim of this research is to investigate the use of Remote sensing (RS), geographic information system (GIS) and the frequency ratio (FR) for flood susceptibility mapping in the lower part of Markham river under Morobe province in PNG. FR model is used to handle different independent variables via weighted based bivariate probability values to generate possible flood susceptibility map. A historical flood inventory database of PNG resource information system (PNGRIS) was used to generate 143 flood locations based on "create fishnet" analysis. 100 (70%) flood sample locations were selected randomly for modeling purpose. Ten independent variables, namely land use/land cover, elevation, slope, topographic wetness index (TWI), surface runoff, landform, lithology,

distance from main river, soil texture and soil drainage were used into the FR model for flood susceptibility mapping. The FR model output is validated with remaining 43 (30%) flood points, where 42 points are marked as correct predictions which indicate an accuracy of 97.7% in prediction. The flood susceptibility mapping using FR model could be a useful tool for the researchers, planners and local government administrators in devising flood mitigation strategies.

ID: ICRSTA2018_10014

Title: A study on enhancement of decomposition method for detection of various land cover targets based on hybrid polarimetric parameters generated from RISAT-1 SAR images

Name: Dheeraj Kumar
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Abstract:

The main objective is to investigate m-δ and m-χ decomposition methods for identification of various land-cover targets over parts of Burdwan district, West Bengal using India's first Radar Imaging Satellite-1 (RISAT-1) Synthetic Aperture Radar (SAR) images that are based on hybrid polarity SAR architecture. The hybrid polarity SAR consists of circular polarized pulses in transmission and coherent orthogonal linear polarized echoes in mode of reception. The variations of Radar return signal and scattering decomposition depend on the geometrical, structural and electrical properties of target under consideration. The images for the present study acquired by RISAT-1 are the single look complex (SLC) with fine resolution strip-map imaging mode (FRS-1). Here, stokes classical parameters g0, g1, g2, g3 are derived to study the RADAR return signal. From these stokes parameters, the degree of polarization (m), relative phase (δ) and degree of circularity (χ) are also calculated. m-δ and m-χ space decomposition methods have also been carried

out to understand scattering mechanisms in terms of odd bounce, even bounce and volume component. It has been observed that volume scattering component is over estimated as compared to other scattering components in both decompositions for all land cover targets like water-body, paddy fields, forest, river, bare field and built-up. To minimize this kind of misclassification, a new algorithm for volume scattering component has been developed to get the best result in detection of land-cover targets. It has been shown that the proposed volume component algorithm in circular transmit and linear receive (CTLR) mode helps to improve better classification of land-cover targets compared to the m-δ and m-χ space decomposition methods. This work presents appreciable results from India's indigenous microwave SAR satellite.

ID: ICRSTA2018_10024
Title: A Study on Urban Flood through the Heavy Rain Trend and Management System

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Abstract:
The climate changes in worldwide is undergoing. Disasters have been arising for the extreme weather changes all over the place furthermore, the concerns for the climate changes get intensified, so that the necessity for this study has also increased. In recent, most people have recognized that mass natural disasters which are periodically occurred in major cities around the world, are the results by the climate changes, and it reminded us that the climate change issues are relating with our survivals and safety. Disasters by storm and floods in Korea that we periodically have been experiencing every year have become larger, therefore it steadily gives damages toward economic aspects and human's life. In Seoul, which was considered to have sufficient infrastructure due to the stabilized urbanization and urban management system, it had to suffer disaster from the climate change. Particularly, due to the heavy rain that concentrated in a short period of time, Gangnam and Gwanghwamun flooded, and landslides occurred in the city center, resulting in numerous human and material damage. So based on the data of the past 30 years, we have forecasted the trend of heavy rains over the next 10 years. We used the ARIMA model, SPSS time series analysis model, to predict the heavy rainfall trend. It is closely related to the urban flood, so we looked at the trend of the heavy rain to manage the urban flood effectively. Finally, based on the analysis and urban flood real frequency data, we identified urban flood status and suggested a system to manage urban flood in Seoul.

ID: ICRSTA2018_10025
Title: A study on Forest Fire Assessment using GIS technology

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Abstract:
Forest fires cause landscaping changes, soil degradation, human and property damage. To reduce the damage caused by forest fires, forest fire risk assessment should be prepared. In this study, the study area was limited to Gangwon-do in korea, the database was constructed using GIS by checking the attribute information necessary for forest fire assessment. The vulnerability index, which affects the forest fire risk assessment, researched the relationship between the location of the forest fire(Statistical Yearbook of Forest Fire published by Korea Forest Service) and the weather information(Automatic weather station(AWS) used by Korea Meteorological Administration). As a method to be used for forest fire assessment, the relationship between location of the forest fire and weather information is analyzed and expressed as a vulnerability function. The results of this study is expected to be helpful in forest fire risk assessment.

ID: ICRSTA2018_10026
Title: Analysis of forest fire damage risk through forest fire prediction simulation

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Abstract:
Natural disasters is rapidly increased because of unusual weather in recent years. In South Korea, about 70% area of the whole country is composed of mountainous areas. South Korea is affected by continental seasonal winds and lots of steep areas. This is the reason that catastrophic forest fires occur consistently. According to previous studies, forest fires can cause secondary damages, such as landslide and decrease of permeability. In order to minimize the damage of forest fires, it is necessary to analyze risk through using GIS with statistical data and spatial data. In this study, for the forest fire disaster management, Scenarios are written and damage areas are estimated through simulation on target area. Spatial information data and several kinds of forest type data were used to analysis the risk. Damage area was estimated through the simulation method. The statistical data of 2, 10, and 30 years forest fire frequency, forest type, wind speed, wind direction and weather factors are used to find frequency of occurrence and to simulate the area using GIS in this paper. The vulnerable index of forest fire are decided by selecting the forest type distribution in target area. The result are used to analysis risk. The result of the study show the frequency and estimated damage areas. So the government and administrative agencies could use to establish structural and non-structural management plan

ID: ICRSTA2018_10027

Title: A Study on Seoul's flood monitoring system, change of approach and direction

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Abstract:
Korea has suffered many times in history due to heavy rains, typhoons and heavy snow. The floods were caused by storms, tidal waves, and floods caused by typhoons. Heavy rain and strong winds are the biggest causes of flooding. The damage caused by the typhoon is also significant because of the indirect damage such as tsunami which occurs additionally. Seoul, the capital of the Republic of Korea, is a region of great concern, as the population is concentrated. During heavy rain during the summer, flood damage has been repeatedly caused by lowlands or faulty drainage. The Seoul metropolitan government planned the 2002 floods in preparation for floods in September 1990 due to the flood. In 2009, it was not damaged even in the highest precipitation for 63 years. The Seoul Metropolitan Government has also established monitoring systems and preventive measures to prevent floods. In this study, we review the damage caused by flood damage in Seoul, the monitoring system, and the evolution of the prevention policy based on the data of recent 20 years or less.

ID: ICRSTA2018_10028

Title: Real-time Red Tide Detection Method for Coastal Monitoring.

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Abstract:
In this study, we developed and applied the image processing technique to detect the red tide entering the seawater desalination plant in advance. It is difficult to forecast the occurrence of red tides and the movement of ocean currents is not constant. Therefore, real-time monitoring technology is needed to prevent coastal damage. We developed and applied the image processing technology to search for the red tide in real time in the acquired image in order to carry out this unattended automatically for a long time. Recognition of red tide is based on image processing color recognition technology. It is judged that the existing technology, RGB color system recognition, is sensitive to the change of the brightness of the target object, so it can not be applied to the red tide that floats in the

sunlight and changes in brightness in real time. More specifically, when the same red tide phenomenon is floating in two different locations, the R, G, and B values may appear differently depending on the reflectance of sunlight and the like. In conclusion, we detected red tide using the HSV color system recognition technology that can keep track of the same color even if the position and brightness of the object change. Because these techniques are applied, images can be received simultaneously in real time, and red tide detection is possible, but due to the ambiguity of color, it is necessary to designate a specific area for applying the image processing algorithm in screen. For this, we designed the system to monitor only the sea except the land and sky using the ROI algorithm. In addition, since the coordinates of the red tide are error when the camera is floated on the sea, the ship is tracked by the match tamplete algorithm and the coordinates of the red tide are corrected after calculating the displacement. Finally, comparing 'the represented red tide movements by graphs' and 'the red tide direction and movements by satellite' is to be needed.

ID: ICRSTA2018_10029
Title: Google Earth Engine Based Three Decadal Landsat Imagery Analysis for Mapping of Mangrove Forests and its Surroundings in the Trat Province of Thailand

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Abstract:
Monitoring and understanding the changes in mangrove ecosystems and their surroundings are required to determine how mangrove ecosystems are constantly changing while influenced by anthropogenic, and natural drivers. Consistency in high spatial resolution (30 m) satellite and high performance computing facilities are limiting factors to the process, with storage and analysis requirements. With this, we present the Google Earth Engine (GEE) based approach for long term mapping of mangrove forests and their surroundings. In this study, we used a GEE based approach: 1) to create atmospheric contamination free data from 1987-2017 from different Landsat satellite imagery; and 2) evaluating the random forest classifier and post classification change detection method. The obtained overall accuracy for the years 1987 and 2017 was determined to be 0.87 and 0.96, followed by a Kappa coefficient 0.80 and 0.94. The change detection results revealed a significant decrease in the agricultural area, while there was an increase in mangrove forest, shrimp/fish farm, and bare land area. The results suggest that interconversion of land use and land cover are affecting the landscape dynamics within the study area.

ID: ICRSTA2018_10023
Title: Drought monitoring of the Korean Peninsula using hydrological drought index based on GRACE satellites data

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Abstract:
Drought is a complex natural hazard that can range in a regional or a national scale. Drought can be defined as a deficit of water compared with normal conditions and the main cause of it is the lack of precipitation that can propagate to a deficit in water bodies such as stream, reservoir, soil moisture, and groundwater. Recently, the Korean Peninsula has been seriously affected by the 2014-2015 drought, and the risk of drought is ever increasing. The monitoring of drought is one of the key efforts to reduce the impacts of drought and to manage water efficiently. Even though conventional drought indices based on meteorological, agricultural and hydrological data are still popular in drought severity quantification, novel indices based on remote sensing prove to be effective for spatio-temporal drought monitoring. This study estimates a hydrological drought index using the data from Gravity Recovery and Climate Experiment (GRACE) satellites, which can

measure the changes of terrestrial water storage (TWS) including snow water equivalent, surface water, soil moisture and groundwater. Normalized GRACE-based TWS is calculated to quantify TWS deficits, and the drought in the Korean Peninsula is assessed for the period of 2003~2016. Compared with other drought indices, the drought index based on GRACE satellites data show high potential to be useful for drought monitoring and risk assessment.

Computer Science & Communications: Technical Session 3

ID: ICMTT2018_10001
Title: Microwave characterization of Activated Carbons
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Abstract:
Microwave complex permittivity measurements of activated carbons were investigated using two different microwave measurement techniques, microwave cavity perturbation at 2.5 GHz and broadband coaxial probe in the frequency range between 10 MHz and 10 GHz. Such measurements demonstrate the ability of these materials to interact with the microwave electric field, both in terms of strong polarization and ab-sorption. We have thus used complex permittivity to quantify the variability of differ-ent forms of activated carbon produced from different sources and different treat-ments, such as thermal treatments or impregnation. In addition, the cylindrical cavity at 2.5 GHz was used for temperature-dependent dielectric properties measurements of activated carbons to investigate their susceptibility to microwave heating as function of temperature. Microwave complex permittivity of activated carbons was measured in the temperature range from $30^{o}C$ up to $150^{o}C$.

ID: ICMTT2018_10003
Title: CMOS Active Circulators
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Abstract:
Circulators are the component that can do transmit and receive simultaneously in a single-antenna transceiver, and they generally differ from the conventional switch circuits, which do transmit and receive by rapid switching. Since passive circulators are manufactured by ferrite which forms huge volume; it is difficult to be fabricated on the integrated circuit. Therefore, the development of active or transistor-based circulators is necessary. In this paper, two active circulators utilizing different unit cells by connecting in the ring-type configuration are introduced. One of the active circulators utilizes the existing quasi-circulator (QC) as unit cell, and the other one utilizes the bridge-T network (BTN). The two configurations are all work well in achieving the 3-port circulator. The circuits are fabricated in TSMC 0.18um CMOS 1P6M process.

ID: ICMTT2018_10000
Title: Magnetic Field Variations of Microwave Refractive Index
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Abstract:
Microwave refractive index and nonuniformity of electromagnetic field inside the magnetized and/or nanocomposite media are studied. Extraordinarily variations of microwave refractive index have been experimentally observed in transmission of electromagnetic waves of millimeter waveband through the plates of yttrium iron garnet and reflection of waves from the plate. Measurements are carried out in frequency range from 12 to 38 GHz. It has been found that the transmission and reflection coefficients undergo extraordinarily large variations if external magnetic field is applied. In particular, for the plate with thickness of 2 mm the variations are realized from − 99% to + 950%. Metamaterials based on opal matrix and containing magnetic particles are studied both experimentally and theoretically and their complex refractive coefficients at frequencies of millimeter waveband are obtained by comparing the results of calculations with the experimental data on transmission and reflection coefficients and their variations with an

applied magnetic field. The metamaterials under study contain metallic cobalt, nickel and iron particles, nickel-zinc ferrite and silver particles, or ferrite-garnet Nd3Fe5O12 particles. A parameter, characterizing the nonuniformity of electromagnetic fields at different distances from a magnetic particle, has been introduced and calculated. It is found that the nonuniformity drastically varies depending on the distance from magnetic particle and on external magnetic field. The results of detailed investigation of magnetic field dependence of the refractive index offers a possibility to utilize these extraordinarily large variations for tuning electronic devices in the millimeter-wave region, for example, reflection from the magnetized ferrite is advantageous in phase shifters and isolators.

ID: ICMTT2018_10008
Title: The coal's layer temperature regime under conditions of heat removal of absorbed microwave energy by radiation and convection simultaneously

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Abstract:
Coal is one of the most popular sources of energy. However, it has a relatively low energy efficiency due to high humidity and a greater release of harmful substances during combustion. On the other hand, the coal reserve on earth is estimated at 500 years and the cost is relatively low. This causes the search for new ways of processing coal. One way to efficiently process coal, while reducing the humidity and content of harmful components is microwave treatment. The basic information for microwave exposure to coal is the temperature field. In this paper, an approximate-analytically nonlinear mathematical model for heating a flat coal mass is studied, provided that the absorbed microwave energy is removing by heat radiation and convection simul-taneously.

Medicine & Healthcare: Technical Session 1

ID: PHPM2018_10004
Title: Implements Assessment and Secondhand Smoke Exposure at Hospitals, Schools and Public Transportation Vehicles in Guangdong, China: a repeat cross-sectional study
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Abstract:

Background High burden of chronic non-communicable disease contributed by secondhand smoke (SHS) at public venues makes tobacco control work a top priority. Despite plenty of studies were conducted to assess the tobacco control effects, few explored the effects at public places combining with smoke-free implements longitudinally.

Objective This study aimed to systematically assess tobacco control implements and SHS incursion at hospitals, schools and public transportation vehicles in 2010 and 2012, respectively, and to explore the relationship between the enforcements and the tobacco control effects across the public venues.

Methods Multi-stage cluster sampling was adopted to select respondents and organizations. Key information interviews and smoking environment observations were conducted in the organization survey. The household interviews modified from Global Adult Tobacco Survey (GATS), were used to monitor the SHS exposures. Strength of Tobacco Control (SOTC) score was calculated as an objective index to assess the organizational enforcement measures. Wilcoxon's signed rank test or chi-square test was used to verify the differences between the repeat surveys when appropriate.

Results Thirty hospitals, thirty schools and twenty-two public transportation vehicles in each survey and 2105 and 2202 responders were respectively selected in this study. For organization survey, comparing with the baseline in 2010, the SOTC in the final survey of 2012 was higher in each aspect of all three indoor public places: Policy (37.92 vs 58.02), Attitude (71.16 vs 83.78), Activity (33.1 vs 52.18), the Outcome of Creating Smoke-free Environment (OCSE) (85.77 vs 88.16), the Smoke-free Environment Signage (SES) (62.22 vs 76.24), and Dissuasion (34.69 vs 56.43). Accordingly, the environmental SHS exposure at hospitals, schools and public transportation vehicles declined over years. Hospital sites got substantially the highest SOTC (69.00 in 2010 vs 83.96 in 2012, P<0.001), followed by school venues (62.24 vs 75.12, P<0.001) and public transportation vehicles (51.45 vs 61.75, P=0.035). Similarly, for household interview, SHS incursion to population decreased over years, of which hospital venues (55.44% vs 45.26%, 18.35%, P<0.001) declined markedly most. It suggests that the venue with more enforcement measures of tobacco control, maybe the cleaner environment and the larger drop of SHS exposure to population were presented.

Conclusions Smoke-free implements were strengthened between 2010 and 2012, and self-reported SHS exposure significantly declined in public venues. The enforcement of smoke-free measures may result in the drop of SHS incursion to the public.

ID: PHPM2018_10005
Title: South African health care workers knowledge and attitude towards cervical cancer and Human Papillomavirus vaccine
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Abstract:

Background: Cervical cancer is a serious public health problem among women globally as well as in South Africa. In South Africa, HPV vaccination programme has been incorporated in 2014 in the school health system. Since health care workers (HCWs) are the most trusted people regarding health issues in general, their knowledge and attitudes regarding HPV infections and vaccination are very important for HPV vaccine program nationally.

Objective: The objective of this study was to determine HCWs knowledge regarding cervical cancer and HPV vaccines.

Methods: This was a quantitative cross-sectional study conducted among 326 medical doctors, 273 nurses, and 27 medical students, using a self-administered anonymous questionnaire.

Results: All the medical doctors, medical student but only half of the nurses were aware of HPV. All the HCWs knew that HPV is transmitted sexually. Their overall level of knowledge regarding HPV infections and HPV vaccine was poor. But the majority intended to prescribe the vaccine to their patients.

Conclusion: There was a knowledge gap regarding HPV infection and HPV vaccine among the HCWs in South Africa.

ID: PHPM2018_10007

Title: Public health and preventive medicine: a new target for occupational medicine in France in territorial collectivities.

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Abstract:

Public health and preventive medicine: a new target for occupational medicine in France in territorial collectivities.

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Professor of Clinical Research MBA at University Leonard de Vinci – Paris France

In France, occupational medicine is changing with new laws since the reforms of 20111 were approved in the French Public Health code1. They are less and less physicians interesting to become practitioners in occupational medicine, so more and more nurses are involved to work in the multidisciplinary approach team to practice occupational medicine under the supervision of a physician, head of the unit.

In 2013, in Orleans, a French town of 108 000 inhabitants, Mr. Olivier Vernay, Director of the municipality human resources decided to create a new preventive medical team with Dr Raphaël Serreau arguing that Public Health specialization could supervised the team of nurses and ergonomists to apply for the medical consultations required by the law for the annual surveillance of the agents. It was a huge gap to achieve with the CDOM2 (Medical Regulatory Organism) to demonstrate that the medical surveillance for the workers could be done efficiently by a public health practitioner and his team.

On 18th of September 2014, Emergency hospital department, SAMU 45 has collaborated with the multidisciplinary team in exchange of medical duties given by Dr Raphael Serreau to obtain a 24 hours, seven days surveillance system of the 2700 Orleans Municipality agents. To perform the team, psychologists, therapists in Relaxation therapy and dietician complete the device. 5 towns in Orleans suburbs was interested and applied to this device in February 2016 and 8 other towns will apply in January 2018 in Orleans Metropole (297 000 inhabitants). At the end of the sharing program, the cost efficacy of a medical consultation (78 €) will be reduced by 25% after the adjunction of the new agents. Nurses will become the pivot3 of the medical team.

Dr Raphael Serreau asked the François Rabelais University in Tours, the Public Health department to collaborate with him via Internship to receive more patients for medical examinations in a less time. 1 or two residents will join the device in November 2017 to help for work related risk factors for shoulder disorders4.

It will be an important public health objective to reduce the medical cost in the territorial activity with new horizon policy, after presidential election in May 2017 in France because national funding and state dotation will be drastically reduced to the municipalities. Public Health and preventive medicine are now constructed to find solutions and priorities to achieve these goals5.

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ID: PHPM2018_10009
Title: TOBACCO CESSATION - GAINING MOMENTUM
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Abstract:
Tobacco cessation - Gaining momentum
Tobacco is the foremost preventable cause of death and disease in the world today. Globally approximately 5.4 million people die each year due to diseases resulting from tobaccoconsumption. India at present is in the second stage of tobacco epidemic, whereby the percentages of smokers as well as deaths due to smoking are on the rise. Every year, almost 1 million people die due todiseases caused by tobacco use in India. All these deaths are preventable. Essentially all body systems (nervous, respiratory, digestive, circulatory &hematological, immune, endocrine & metabolism, excretory, reproductive, sensory, cutaneous, skeletal) are affected by smoking. Exposure to second hand smoking results in lung cancer and heart diseases among adults, and SIDS (Sudden Infant Death Syndrome), chronic respiratory infections, exacerbation/ worsening of asthma among children. Nicotine Gums are available over the counter along with certain pharmacotherapy in India.Tobacco cessation clinics have been set up to develop models of intervention, and train health professionals in service delivery. .A proper step wise counselling has helped to gain nicotine free life among a number of individuals. Anti-tobacco campaign in India is gaining momentum. The Supreme Court of India has made a ban on smoking in public placesThe National Health Policy 2017 of Government of India has set the target of "relative reduction in prevalence of current tobacco use by 15% by 2020 and 30% by 2025". Quitting tobacco is difficult. But innovative measures to help people kick the habit. More public awareness/mass media campaigns for awareness building and for behavioral change arerequired. A range of more intensive behavioral methods should be used to support patient attempts at tobacco cessation .Barriers to the provision of tobacco cessation advice by all health professionals should be identified and addressed.

ID: PHPM2018_10013
Title: NERVE LATERALIZATION IN SIMULTANEOUS DENTAL IMPLANT PLACEMENT
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Abstract:
ABSTRACT Inferior alveolar nerve repositioning/Lateralization is a technique that has been used for more than 20 years with good survival and survival rates. This is sometimes the only possible procedure to help patients to obtain a fixed prosthesis, especially in edentulous atrophic posterior mandibles. There are two main techniques for inferior alveolar nerve repositioning that are relatively safe and offer a high survival rate: inferior alveolar nerve lateralization and inferior alveolar nerve transposition. Increased protection of the neurovascular bundle is afforded during implant placement. Inferior alveolar nerve lateralization and transposition in combination with the installation of dental implants offer advantages, such as reducing the risk of inferior alveolar nerve damage. With the help of newer advancement like piezo electric

its becoming a easy and safe procedure. With careful pre-operative surgical and prosthetic planning, imaging, and extremely precise surgical technique, this procedure can be successfully used for implant placement in an edentulous atrophic posterior mandible. A case series of 12 inferior alveolar nerve lateralization is presented in the current paper with over 98% success rate at our institute at ITS dental college & research centre Muradnagar ghazizbad U.P. India

ID: PHPM2018_10016
Title: Protective effect of fermented Angelica tenuissimae extract on photoaging via Nrf2/HO-1 antioxidant pathway

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Abstract:
Oxidative stress, which occurs after ultraviolet (UV) radiation, usually leads to inflammation, wrinkling, and photoaging. Angelica tenuissimae has been used as a traditional medicine in Korea. This study investigated the effect of A. tenuissimae extract fermented with Aspergillus oryzae (FAT) on anti-oxidant, anti-wrinkle, and wound healing effect in photoaged skin cells. Scavenging activity of reactive oxygen species and the regulation of anti-oxidant enzyme, HO-1, and inflammatory markers such as COX-2, iNOS were determined in HaCaT cells. Scratch-induced wound healing assay and anti-wrinkle effects were also evaluated in UVB-exposed HaCaT and HS68 cells. Results showed that FAT had anti-oxidant, anti-inflammatory, and anti-wrinkle effects. FAT increased the production of HO-1, type I procollagen and decreased MMP-1 mRNA expression and elastase activity regardless of UVB exposure. FAT also exhibited wound healing activity at relatively low concentration. Additionally, enzyme inhibition assay showed that FAT reduced COX-2 expression induced by UVB exposure via Nrf2/HO-1 signaling. FAT can be used as a promising candidate for anti-photoaging ingredient. This research was supported by the Ministry

of Trade. Industry and Energy (MOTIE), Korea Insititute for Advancement of Technology (KIAT) through the Encouragement Program for The Industries of Economic Cooperation Region.

ID: PHPM2018_10014
Title: Differences in Injury Mechanism and Disposition According to Gender, Among Head and Neck Injury Patients Visiting the Emergency Department

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Abstract:
Background and Purpose Head and neck injuries are one of the most commonly encountered type of injuries within an emergency department. The head and neck are also the most common areas of injury in the intimate partner violence. Therefore, in this study, we investigated the general characteristics of head and neck injury patients whom visited the emergency department, and also identified the differences in injury mechanism and disposition according to gender. Subjects and Method The study was carried out by investigating medical records retrospectively. Study subjects were adult head and neck injury patients (over 18 years of age) whom were submitted to the emergency department between Jan. and Dec. of 2015. Patients with head and neck injury due to transport accidents were excluded from the study. Information were gathered from NEDIS(mode of transfer, injury intention, injury mechanism, diagnosis, disposition, etc). The information was analyzed to identify differences in injury mechanism, injury site and disposition according to gender. If an injury was deemed as intentional, the assailant was identified for further comparison between gender. In addition, for cases of intimate partner violence, the severity of diagnostic result of injury was identified for further comparison between gender. The student T-test was utilized for continuous variables, while the Chi-square test was utilized for categorical

variables by The STATA 14 (StataCorp, Texas, USA) statistical package Results A total of 5,788 head and neck injury patients were submitted to the emergency room during the scope of the study time period. Patients with injury due to transport accidents were excluded and the remaining 2,499 adult head and neck injury patients were chosen as subjects for the study. Among the study subjects, 730 (29.%) were females. The mean age of males and females were 43 ± 16 and 47 ± 18 respectively. Non-self harm injury due to violence was more common in males (358 cases; 20.2%) than females (120 cases; 16.4%). Blunt injury was more commonly seen in females(Male: 23.5% vs. female: 35.9%), while fractures were more commonly seen in males(Male: 18.6% vs female: 10.4%)(Table 1). Meanwhile, among cases of non-self harm injury due to violence, the intimate partner was identified as the assailant at a significantly higher rate in females compared to males (Male: 0% vs Female: 37.5%). No differences in injury type and admission/discharge rates were observed among females whether or not the assailant was the intimate partner. Conclusions Non-intentional injury was the most commonly encountered type of head and neck injury within the emergency department. Injury due to violence was more commonly seen in males, while injury due to unknown mechanism was more commonly seen in females. Among female head and neck injury patients due to violence, the intimate partner was identified as the assailant at a significantly higher rate compared to males. Prospective studies are thought to be needed in the near future.

ID: PHPM2018_10011

Title: Assessment of Dental Caries and Nutritional Status among School Children of Kathmandu Valley

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Abstract:
Assessment of Dental Caries and Nutritional Status among School Children of Kathmandu Valley Dr. Sujita Shrestha BDS, MPH, PhD scholar (Mewar University) Abstract Background:Oral diseases have significant impact on overall health and well-being of an individual. Diet and nutritional factors play important role in oral health and disease. Dental caries and Body Mass Index (BMI) are correlated and may be the confounders of disease status which affect the quality of life of an individual. Objective: To assess dental caries and nutritional status among 5-6 years old school children of Kathmandu valley. Methods: A cross sectional study was done amongst 437 school children of 5 to 6 years of age. Information on several aspects of the teeth such as decayed, missing, filled, teeth (dmft) index and Quality Adjusted Tooth Year (QATY) as well as BMI were collected. Poisson regression was used to analyze the difference between dental caries status in relation to BMI, mother's education, brushing habit and sweet consumption. Result: The prevalence of dental caries was 68% with mean dmft score 3.17. Based on the BMI score of the children, 13.5% were underweight, 70.5% normal weight, 6.4% overweight and 9.6% obese. Poisson's regression model showed BMI, mother's education and brushing habit have a significant effect on dmft ($p \leq 0.05$), whereas the age of the children and sweet consumption showed no significant effect on dmft score. QATY, as determined by dental caries status decreases with an increase in age. Conclusion: The prevalence of dental caries is high in 5-6 years old school children and is affected by the BMI, mother's education and brushing habit. Preventive programs like school oral health program can be helpful in preventing the occurrence of dental caries.

ID: PHPM2018_10017

Title: Prevalence of metabolic syndrome and metabolic components and individual component combinations and risk factors of metabolic syndrome (MS) according to hypertension status in Tibetans

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Abstract:

Objectives: To estimate the prevalence of MS and metabolic components and their associated factors and metabolic component combinations according to hypertension status in Tibetans living at high altitude. Method: Multistage sampling of 1,473 participants, including 799 hypertensive patients and 674 normotensive subjects. IDF (International Diabetes Federation) criteria were used to diagnose MS. Results: MS prevalence (54.9% vs. 15.6%, P<0.05) and the number of metabolic components more than three (59.6% vs. 32.2%, P<0.05) were both higher in the hypertensives than normotensives. In hypertensive patients, the most common component was central obesity (79.5%) and it combined with: high blood pressure (BP), in those with 2 risk factors, plus fasting hyperglycemia, in those with 3 risk factors, and high TG, in those with 4 risk factors. In normotensive subjects, the most common single component was low HDL (44.4%), and most common component combination included central obesity and fasting hyperglycemia in those with 2 risk factors, plus high BP in those with 3 risk factors, and high TG in those with 4 risk factors. Hypertension increased the risks of MS and high TG, but decreased the risk of low HDL and hyperglycemia. BMI and being female both increased the risk of MS in hypertensive and normotensive participants. Being female, high BMI, low income, and high educational levels are features of high-risk MS in normotensive Tibetans. Conclusions: The frequency of MS and its components and with >=3 cardiometabolic risks were greater in hypertensive patients than normotensive subjects. The priority of prevention from CVD by targeting metabolic components in the hypertensives was different from normotensives though the most frequent elements of MS components combinations were similar in rural highlander Tibetans. Different MS components had various lifestyle and socioeconomic factors in hypertensive and normotensive participants.

Medicine & Healthcare: Technical Session 2

ID: GORM2018_10007
Title: JNJ-26481585 suppresses tumor growth via c-Myc/Bmi-1/p21cip 1 pathway in ovarian cancer
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Abstract:

Overexpression of c-Myc is associated with worse outcomes in ovarian cancer, indicating that c-Myc may be a promising target for ovarian cancer therapy. Histone deacetylase inhibitors (HDACis) has been shown to block c-Myc expression and tumor growth. JNJ-26481585 is a second-generation, and previous studies have shown that JNJ-26481585 treatment significantly reduces the growth of rhabdomyosarcoma and lung cancer cells. However, little is known about the effects of JNJ-26481585 on human ovarian cancer cells. Thus, we investigated whether JNJ-26481585 can inhibit ovarian cancer growth in cell culture and xenograft models. In c-Myc-positive ovarian cancer SK-OV3 cells, JNJ-26481585 significantly suppressed cell proliferation via inhibition of c-Myc in a dose-dependent manner, accompanied by a sharp decline in B lymphoma moloney murine leukemia virus insertion region 1 (Bmi-1) protein expression and a steady increase in cyclin-dependent kinase inhibitor p21cip 1 protein expression. However, c-Myc-negative SK-OV3 cells exhibited intrinsic resistance to JNJ-26481585. Moreover, we found that c-Myc and its downstream Bmi-1/ p21cip 1 signaling targets were modulated by JNJ-26481585, as evidenced by microarray analysis. Silencing of c-Myc in c-Myc-positive ovarian cancer cells resulted in resistance to JNJ-26481585, while upregulation of c-Myc in c-Myc-negative ovarian cancer cells increased sensitivity to JNJ-26481585. In xenografts models of c-Myc-positive and c-Myc-knock-in ovarian cancer, JNJ-26481585 significantly downregulated the expression of c-Myc, blocked the Bmi-1, upregulated p21cip 1 and suppressed tumor growth. These effects were attenuated in c-Myc-negative and c-Myc-knockdown xenograft models. Thus, JNJ-26481585 resistance appears to be highly associated with the status of c-Myc expression in ovarian cancer. Our findings suggest that targeting c-Myc using JNJ-26481585 might serve as a novel therapeutic strategy in c-Myc-positive ovarian cancers.

ID: GORM2018_10008
Title: Effects of different vitrification-warming methods on blastocyst survival rates and clinical outcomes
Name: Hua Zhou
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Abstract:

Purpose The objective of this retrospective study was to evaluate the efficacy of different vitrification-warming rates for the cryopreservation of human blastocyst stage embryos in terms of post-warming survival rate and clinical outcomes. Methods A retrospective comparative study of frozen embryo transfer (FET) cycles in infertile patients undergoing single blastocyst transfer at our hospital between December 2014 and December 2015. These FET cycles were divided into two groups by the warming rates. For warming, a petri dish containing 200 μL droplets with three different thawing solutions (TS1 0.6 mol/L sucrose in HEPES-buffered media supplemented with 10% HAS, TS2 0.25 molL/L sucrose in HEPES-buffered media supplemented with 10% HAS and TS3 HEPES-buffered media supplemented with 10% HSA) were made and then kept at 37 ℃. For warming, the capillary end of the micro-pipette with blastocyst was placed into the TS1 quickly, then the blastocyst was released from the capillary. For group 1, compared with group 2, the blastocyst was thawed in higher warming rate and was incubated in TS1 for 1 min. For group 2, the blastocyst was incubated in TS1 for 3 min. Then, the

blastocyst was incubated in TS2 for 5 min and in TS3 for 5 min. After warming, the blastocyst was transferred to the blastocyst culture medium and cultured for 2–4 h in the incubator to assess its morphological survival. Blastocyst survival rates and clinical outcomes were compared between the two groups. Results There were no statistically differences in blastocyst survival rates (97.40% vs 96.05%, P > 0.05) between the two groups. However, compared with group 2, group 1 improved the warmed blastocyst implantation/clinical pregnancy rate (49.82% vs 41.37%, P < 0.05), live birth rate (42.43% vs 36.22%, P < 0.05) and also increased the monozygotic twin rate (3.17% vs 1.93%, P < 0.05). There were no differences in the average gestational weeks (37.63 ±1.67 vs 37.14 ±1.55), premature birth rate (8.8% vs 6.69%), average birth weight (3017.89 ±489.98 g vs 3050.88 ±524.03 g) and low birth weight rate (10.60% vs 10.13%). Conclusions No significant differences in blastocyst survival rates and neonatal outcomes were observed, while higher warming rate improved the warmed blastocyst implantation/clinical pregnancy rate and live birth rate markedly, there was also an increased risk of monozygotic twin pregnancies.

ID: GORM2018_10009
Title: Telomeres and Female Reproduction
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Abstract:
Reproductive aging involves declines both in oocyte number and developmental capacity. Declining oocyte number alone cannot explain the manifestations of reproductive aging in women. The telomere theory of reproductive aging has proposed to explain the complex phenotype found in oocytes from older women. Telomeres are TTAGGG repeats and associated proteins, which are located at the ends of all eukaryotic chromosomes. Telomeres form loops at the ends of chromosomes to provide structural and genomic stability and protect them from deleterious events such as inappropriate DNA repair, illegitimate recombination or improper segregation of the chromosomes during mitotic or meiotic divisions. However, telomeres gradually shorten primarily due to successive rounds of genomic DNA replication and also as the result of the adverse effects of oxidative stress, genotoxic agents, diseases related to ageing and environmental factors on the nuclear materials of dividing or non-dividing cells. Telomeres mediate biologic aging in organisms as diverse as plants, yeast, and mammals. Shortening of telomeres in human recapitulates the aging phenotype of human oocytes. Fortunately, telomere can maintain its length and integrity via acting telomerase. Studies in mice and women show that telomere shortening in oocytes provides a parsimonious explanation for the effects of reproductive aging on oocyte quality. Measurement of polar body telomere length may predict oocyte quality in women undergoing ART.

ID: GORM2018_10002
Title: The Effectiveness Crocus sativus L. (Saffron) on Sexual Dysfunction in Women at Reproductive Ages
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Abstract:
The Effectiveness Crocus sativus L. (Saffron) on Sexual Dysfunction in Women at Reproductive Ages Fatemeh Rahimi Kian, MSc1*, Mandana Mirmohamad Ali, PhD candidate2, Masume Rahmati , MSc3,Abbas Mehran.MSc2,Saied Goodarzi,PhD4 1*.Nursing and Midwifery Care Research Center , School of Nursing and Midwifery,Tehran University of Medical Sciences,Tehran, Iran, Corressponding author. 2.School of Nursing and Midwifery, Tehran University of Medical Sciences, Tehran, Iran 3. School of Nursing and Midwifery, Iran University of Medical Sciences, Tehran, Iran 4.School of Pharmacy, Tehran University of Medical Sciences, Tehran, Iran Email:

rahimikian@tums.ac.ir Abstract Background: Saffron (crocus sativus L.) has shown many effects in recent studies, including in the field of sexual function . The purpose of this study was to compare sexual function in women at reproductive ages, before and after oral administration of saffron extract . Methods: This clinical trial was a double-blind and placebo -controlled study. The Statistical population of the research consisted of all married women at 18-39 years old ,who were referred to health centers of Arak University of Medical Sciences, that among them, 80 volunteer women with sexual dysfunction (FSFI = 28 or less) and eligible for the study randomly selected and received 30mg/daily of the saffron extract or placebo for 8 weeks. Please note that only 69 patients (35 cases in saffron group and 34 cases in placebo group) have successfully completed the study. Measuring Tool in the study was Female Sexual Function Index (FSFI) , which at the beginning of the study , the fourth and eighth weeks, investigated sexual function in women. Data were analyzed using appropriate statistical tests such as : Independent t-test, Mann-Whitney, Fisher Exact Test, Friedman and chi square. Results: At the end of the fourth week improvement in total FSFI and its domains, compared with the control group was not significant . At the end of the eighth week in the intervention group than the control group, a significant improvement in sexual function total score (P = 0.001) , and its domains include desire (P = 0.001), excitement (P = 0.001), lubrication (P = 0.001), orgasm (P = 0.002) and sexual satisfaction (P = 0.001) was observed , but this increase was not significant in Dyspareunia (P = 0.079). Any serious adverse event was not reported during the study . Conclusions: The results indicate that saffron could be effective on women's sexual functioning and its various domains (including desire , excitement , lubrication , orgasm and sexual satisfaction) except Dyspareunia . Keywords: women's sexual function , saffron extract , reproductive age,sexual dysfunction

ID: GORM2018_10010

Title: Clinical Characteristics of Vaginal Discharge

Associated Streptococcus pyogenes at General Japanese Hospital

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Abstract:

Streptococcus pyogenes (S. pyogenes) is popular pathogen caused various infection disease. This study was conducted to find out the recent clinical characteristics of S. pyogenes isolates from vaginal discharge at Japanese hospital. S. pyogenes was identi-fied by standard laboratory procedure. Antimicrobial susceptibility testing was per-formed by microdilution assay according to CLSI recommendation. Total 61 S. py-ogenes were isolated from vaginal discharge. The major age incidence among 0 - 10 years age group was 14 (23%), among 21 - 30 years age group, 7 (11.5%), among 31-40 years age group, 13 (21.3%), among 51-60 years age group, 8 (13.1%), and among 61-70 years age group, 11 (18%). The numbers of ciprofloxacin and clarithromycin no-susceptible S. pyogenes from 0 - 10, 31-40, and 61-70 years age group were higher than those from other groups. The numbers of clindamycin and minocy-cline no susceptible S. pyogenes from 0 - 10, and 21-40 years age group were higher than those from other group. Furthermore, our study revealed that clarithromycin was completely ineffective in 21-30 years age group (p<0.05). As the numbers of under and not less than 13 year age group were 15, and 46, respectively, the number of adult cases was higher than the number of child cases. Clarithromycin no-susceptible rate was highest and minocycline no-susceptible rate was lowest in both group. There was no significant difference of antimicrobial susceptible trends between under and not less than 13 year age groups. Our study suggests the need for continuous epidemiological surveillance of vaginal discharge associated S. pyogenes because the trend of infectious disease epidemiology is always changing drastically.

ID: GORM2018_10011

Title: DEERS (Diseases of Endometrium-Evaluation & Risk Scoring): A Novel tool for Screening Endometrial Pathology

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Abstract:

Introduction: Various endometrial pathologies contribute to a large proportion of AUB during the reproductive years as well as after menopause. The aim of present study was to validate a novel scoring tool (DEERS: Diseases of Endometrium- Evaluation & Risk Scoring) and to determine its efficacy compared to the Gold- standard histology. This model will help in advance to prognosticate the disease, thus reducing the anxiety for the patient till the final histology report confirms it. Once the efficacy is proven it may also help to reduce the burden of unnecessary samplings to the clinicians as well as decrease the burden of histological slide review for the pathologist. Material and Methods: Patient with AUB in whom cervical, myometrial, ovarian and endocrinal causes were ruled out and were planned for endometrial curettage, were recruited for the study. Cases who were planned for hysterectomy for reason other than endometrial pathologies, were taken as controls. Pre - operatively patient characteristics were noted and TVS was performed to calculate DEERS for all. Results: This study demonstrated high efficacy (sensitivity of 72.2%, specificity 92.1%) of DEERS in predicting Malignant/Premalignant diseases of endometrium in women presenting with AUB. Conclusion: This is the first study wherein a novel concept of non-invasive scoring system to screen endometrial pathologies has been used. The results look promising with high efficacy to predict endometrial malignancy.

ID: NeuroConf2018_10007
Title: Moleculo-genetic mechanisms of erythropoietin treatment in vitro spinal cord injury model

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Abstract:

Objectives; To investigate the underlying molecular mechanisms and the therapeutic time window for preventing astrogliosis with erythropoietin (EPO) treatment after in vitro modeled spinal cord injury (SCI). Method; Cultured rat spinal cord astrocytes were treated with kainate and scratching to generate an in vitro model of SCI. EPO (100 U/ml or 300 U/ml) was added immediately or 2, 4, or 8 hours after injury. Some cultures were also treated with AG490, an inhibitor of the EPO-EPO receptor (EpoR) pathway mediator Janus kinase 2 (JAK2). To evaluate neurite extension, rat embryonic spinal cord neurons were seeded onto astrocyte cultures and treated with EPO immediately after injury in the presence or absence of anti-EpoR antibody. Results; EPO treatment at up to 8 hours after injury reduced the expression of axonal growth inhibiting molecules (glial fibrillary acidic protein, vimentin, and chondroitin sulfate proteoglycan), cytoskeletal regulatory proteins (Rho-associated protein kinase and ephephrin A4), and pro-inflammatory cytokines (tumor necrosis factor-alpha, transforming growth factor-beta, and p-Smad3) in a dose-dependent manner (p<0.001). Most effects peaked with EPO treatment 2-4 hours after injury. Additionally, EPO treatment up to 4 hours after injury promoted expression of the EpoR (>2-fold) and JAK2 (>3-fold) in a dose-dependent manner (p<0.001), whereas co-treatment with AG490 precluded these effects (p<0.001) (Figure 1). EPO treatment up to 4 hours after injury also enhanced axonal β-III tubulin-immunoreactivity (>12-fold), and this effect was precluded by co-treatment with an anti-EpoR antibody (p<0.001) (Figure 2). Conclusion; The application of EPO to astrocytic cultures after modeled SCI enhanced EPO-EpoR signaling and specifically JAK signaling, but not PI3K/AKT signaling. These changes were associated with decreased TNF-α, TNF-β, and Smad expression and the reduced expression of cytoskeletal regulatory proteins ROCK and EphA4.

Finally, EPO treatment promoted neurite outgrowth when applied within 4 hours after injury. Our findings suggest that it may be effective if provided around 2-4 hours after injury in the inhibition of further neuronal deterioration point of view, and it may be optimal if administered immediately after injury in the neuro-regenerative point of view.

Medicine & Healthcare: Technical Session 3

ID: IPC2018_10011
Title: The Use of Probiotics to Minimize Respiratory Tract Infections Incidence in Children: A Meta-Analysis
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Abstract:
OBJECTIVES: Respiratory tract infections (RTIs) is a common disease in children and is associated with high morbidity. The purpose of this study was to analyze whether probiotics administration may decrease the incidence of RTIs. METHODS AND MATERIALS: We systematically searched PubMed databases for randomized clinical trials (RCTs) regarding the effect of probiotics on RTIs in children. We included the trials which reported the incidence of RTIs. Random-effects model was used to estimate odds ratio (OR) in Review Manager (RevMan) version 5.3. Copenhagen: The Nordic Cochrane Centre, The Cochrane Collaboration, 2014. Analysis result was presented in OR and the corresponding confidence intervals (CI). RESULTS: Eight trials with a total of 3040 patients were contributed to analysis. Probiotics Lactobacillus bulgaricus, Lactobacillus casei, Lactobacillus rhamnosus strain GG, Lactobacillus acidophilus, Lactobacillus plantaris, Bifidobacterium longum, Bifidobacterium infantis, Bifidobacterium breve, Bifidobacterium animalis subsp. Lactis, and Streptococcus thermophilus were used in the studies with various doses and timing. A total of 1516 patients received probiotics and the rest 1524 received placebo. Numbers of reported RTIs were 176 and 265 respectively. Study analysis showed that probiotics administration in children significantly lower the incidence of RTIs compared to placebo group (OR = 0.50, 95% CI 0.33-0.74; p = 0.0006; I2 = 49%). CONCLUSION: Based on the currently available data, administration of probiotics was beneficial in lowering the incidence of RTIs in children.

ID: IPC2018_01006
Title: Primary School Admission Age and School Performance
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Abstract:
OBJECTIVES: Currently China takes chronologic age as the only standard for primary school admission. Only children older than 6 years old are admitted. However, there has been no population-based research to evaluate the effects of different school admission policies. In this study we hope to find the relationship between primary school admission age and students' school performance. We also expect to explore the effects under different school admission policies via international comparison. METHOD: This study analyzes the Programme for International Student Assessment (PISA) 2009 database and focuses on the relationship between primary school admission age and PISA scores in math, science and reading, and the grade-repeating rates during primary school. We also compared results from multiple countries/regions.
RESULTS: We found that school performance is related to school admission age. Those who start primary school early repeat grades more often, indicating poor adjustment to school education. In Shanghai and other Asian countries/regions, those who start primary school more than 3 months earlier than 6 years' age have lower PISA scores. This effect is more significant in boys than girls. Through analyzing PISA 2009 database of the USA, we found that those who start school early obtain higher or same level of PISA scores compared with those who start school at conventional admission ages.
CONCLUSION: School admission age is related to school performance among students in Shanghai. But this effect varies under different educational policies. Starting school too early poses negative effect on long-term school performance, and boys are more vulnerable to this effect. Educational policy makers should take the gender differences into consideration.

KEY WORDS: School Admission Age; School Performance, Programme for International Student Assessment (PISA)

ID: ICMC2018_10002

Title: Intraosseous Administration of Adrenaline does not impair uptake of a Subsequent Injection in Hypovolemic Shock.

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Abstract:

Introduction:

Intraosseous (IO) catheterization is frequently used in medical emergencies, when venous access is difficult to achieve. It is proven to be a rapid way of establishing vascular access. Pediatric Advanced Life Support (PALS) and Advanced Trauma Life Support (ATLS) recommend placement of an IO line if adequate IV access cannot be quickly established. Use of IO adrenaline has been evaluated in a porcine model of cardiac arrest [1]. We decided to evaluate whether IO injection of adrenaline affects systemic uptake of a second drug, injected through the same IO needle in another shock model, where adrenaline may be administered i.e. hypovolemic shock.

Methods:

Ten anaesthetized pigs were exsanguinated by 50% of the circulating blood volume. The experiment was approved by the Animal Ethics Committee, Uppsala, Sweden (5.8.18-05637/2017). Adrenaline (n = 5) or saline (n = 5), respectively, were administered at a clinically relevant dose through a tibial IO needle (EZ-IO®, Teleflex Medical, Morrisville, NC, USA). A subsequent injection of a tracer substance (gentamicin at 7 mg/kg) was administered through the same IO needle. Central plasma concentrations were drawn at 5, 15 and 30 minutes after the IO injection of gentamicin. The concentrations of gentamicin were analyzed on an Architect Ci8200 analyzer. The total coefficients of variation for the gentamicin assay were 1.7 % at 3.0 mg/L and 2.2% at 5.5 mg/L.

Results:

After starting the endotoxin infusion, most of the animals showed signs of hemodynamic instability with reduced meanarterial blood pressure (MAP). As seen in Fig. 1, the concentration of the tracer (gentamicin), were nearly identical regardless of a preceding injection of adrenaline or not.

Conclusions:

This study shows that IO injections of adrenaline, given according to CPR protocol, does not impair the uptake of a subsequent injection of gentamicin administered through the same IO needle in pigs subjected to hemorrhagic shock.

This study strongly indicates, that in the event of cardiac arrest, where adrenaline is administered and there is a return of spontaneous circulation with arrhythmias that need to be treated, antiarrhythmic drugs can be administered IO at ordinary dosage.

Reference:

1. Wong et al. J Surg Res 201: 327 – 33,2016

ID: ICMC2018_10003

Title: Advanced Drug Induced Liver Injury Probably Due to Tolvaptan in a Patient with Acute Heart Failure

Name: SATOMI FUJIWARA
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Abstract:

Introduction: Tolvaptan, a vasopressin type 2 receptor antagonist, is one of the effective diuretics that exhibits the improvement of volume overload without electrolyte abnormalities. However, little is known about adverse effects of tolvaptan because this drug is relatively new. We have experienced a patient with acute heart failure (HF) who showed advanced drug induced liver injury following tolvaptan application. Case presentation: The patient was 89-year-old male with the past history of hypertension and metastatic multiple bone tumors from prostatic cancer. He

presented because of lower limb edema and orthostatic dyspnea, and was subsequently admitted to our hospital diagnosed as HF with preserved ejection fraction. Intravenous dopamine (150 mg/day) and isosorbide dinitrate (50 mg/day) were administered for a week. He also took 7.5 mg of tolvaptan, 30 mg azosemide, 25 mg spironolactone, 5 mg amlodipine besilate and 100 mg aspirin per day after admission.　Next day after admission, non-sustained rapid wide QRS tachycardia was recorded on monitored electrocardiogram, and then amiodarone hydrochloride was administered.　On 9 days after admission, he became ill despite the restoration of HF.　Abnormalities of liver enzymes were observed.　Abdominal computed tomography detected no abnormalities at liver, bile-duct and pancreas.　He underwent cholecystectomy 50 years ago.　Peak AST, ALT, LDH, ALP and gamma-GTP levels were 468 U/L, 549 U/L, 491 U/L, 4,407 U/L and 144 U/L, respectively.　Drug lymphocyte stimulation test indicated that tolvaptan was suspected as a cause of liver injury.　He retrieved gradually, but still kept his bed at our hospital.　Conclusion: We have experienced life-threatening tolvaptan-induced liver injury in a patient with acute HF.　This adverse effect appears to be considered rare, and thus we reported this case.

ID: ICMC2018_10004
Title: A Method for Normal Direction Judge Applied in Electrocardiographic Problem

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Abstract:
Boundary Element Method(BEM) is widely used in electrocardiographic(ECG) problem. Formulations of these problems based on mathematical and numerical approximations of the known source in heart and the volume conductor that can transfer voltages on the surface of the body. To analyze the electric potentials on body surface or epicardial surface, a set of discrete equations derived from a boundary integral equations need to be solved. Solving these equations means to get the potential distribution eventually. In the process of solving, transfer matrix of discrete equations has received considerable attention, how to get an appropriate transfer matrix is an important issue. This paper found that the direction of normal vector could affect the results when calculating the transfer matrix and presents a method analogous to Mesh Current Method to deal with this direction problem. Several simulations have been carried out to verify the accurate results with the correct direction of normal vector using new method within a torso model given simultaneous epicardial and body surface potential recordings.

ID: IPC2018_10010
Title: Clinical characteristics of enteroviral meningitis without pleocytosis in children

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Abstract:
Objectives: This study aimed to describe the clinical characteristics of enterovirus (EV) meningitis according to the presence of cerebrospinal fluid (CSF) pleocytosis. Methods: This was a retrospective analysis of patients aged <18 years old who were diagnosed with EV meningitis by CSF reverse-transcriptase polymerase chain reaction (RT-PCR) testing between January 2015 and December 2016. Clinical variables were compared with regard to the presence of CSF pleocytosis. Results: A total of 305 patients were enrolled in study; 169 (55.4%) had no pleocytosis. Patients without pleocytosis were younger (29.76 ± 43.65 years vs. 36.17 ± 45.49 years, P = 0.05) and had lower white blood cell counts and absolute neutrophil counts (each P = 0.05) than patients with pleocytosis. CSF pleocytosis was present in 22 of 128 patients (17.2%) aged ≤90 days, 2 of 5 patients (40%) aged 3 months–1 year, 4 of 8 patients (50%) aged 1–3 years, and 108 of 164 patients (79.4%) aged ≥3 years. CSF pleocytosis was statistically significantly related to increasing age (P = 0.05). In patients aged ≤90 days,

94.5% underwent lumbar puncture within 24 hours of symptom onset. The frequency of not having pleocytosis was higher or similar to the frequency of having pleocytosis during peak EV meningitis epidemic months (P = 0.001). Conclusion: This study shows that EV meningitis in young infants, with early lumbar puncture, or occurring during peak epidemic seasons cannot be solely excluded by pleocytosis. Also, a confirmation test for EV meningitis should be performed RT-PCR testing.

Medicine & Healthcare: Technical Session 4

ID: NeuroConf2018_10001
Title: Visualization and Quantitative Analysis of the Brain Interstitial Space Based on MR tracer method
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Abstract:
Objective: By using magnetic resonance (MR) tracer method, we measured quantitatively the drainage process of brain interstitial fluid (ISF) and properties of interstitial space (ISS) in rat deep brain nucleus influenced by aging and degenerative diseases. The intrinsic regulatory mechanism of ISF (aquaporin-4) and the external regulation method (painful stimulation) were explored.
Methods: Firstly, by using MR tracer method, ISF drainage properties and structural parameters of ISS in aged rats and AQP4 knockout (KO) rats were measured separately and interfered with painful stimulation. Then, Parkinson's disease (PD) models were induced by injection of 6-hydroxydopamine intracranially and ISS parameters in the substantia nigra were measured. Then we discussed the effect of central nervous system degeneration on substance diffusion in deep brain nuclei ISS.
Results: The clearance coefficient (k') slowed down and the half-life time (t1/2) extended among aged rats. AQP4 gene knockout and pain stimulation can slow down the drainage of ISF significantly in the thalamus, however, there was no significant change in caudate nucleus. The tracer in the thalamus of the AQP4 gene knockout rats diffused more extensively and presented as a more obvious enhancement area and a prolonged residence time than the same time when non-stimuli. In substantia nigra of PD group animals, diffusion coefficient increased and the clear rate slow down with a prolonged half-life time.
Conclusions: The brain flow properties in the deep nucleus could be influenced by degenerative diseases. AQP4 protein and the pain stimuli involved in the regulation of ISF flow. The distribution territories and clearance rates of the ISF are various in different nucleus, which could provide a useful reference for the treatment of brain disease.

ID: NeuroConf2018_10006
Title: Electroencephalographic change of non-affected side of hemimegalencephaly and developmental progress after hemispherotomy
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Abstract:
Hemimegalencephaly is characterized by severe psychomotor impairment and intractable epilepsy, which is often requires a hemispherotomy. After hemispherotomy, epileptic discharges may sometimes occur in the non-affected hemisphere even when clinical seizures do not recur for a long time. We evaluated six cases of hemimegalencephaly after hemispherotomy with a seizure-free period lasting at least 36 months, which we could track using video-electroencephalography. Developmental age (DA) and developmental quotient (DQ) were evaluated using the developmental check- list (Kinder Infant Developmental Scale). We found the DQ declined and the total DA increased in all cases. To study the correlation between DA and epileptic discharges in the non-affected hemisphere, we measured the paroxysmal -index (PI)the number of one-second bins containing one or more epileptic discharges in the non-affected hemisphere, divided by the total number of seconds. The PI and DA data were collected at the same time during every regularly -scheduled evaluation. We calculated the rate of change of PI and DA. Interestingly, expressive language development and PI were negatively correlated when the PI increased at a rate above average. The receptive language DA and PI was

not correlated. This finding suggests the expressive language development delay may worsen when epileptic discharges of non-affected side increase.

ID: NeuroConf2018_10009
Title: Efficacy of Coenzyme Q10 as Migraine Prophylaxis: A Systematic Review
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Abstract:
OBJECTIVES: Migraine is one of the most common neurological disorder and associated with high morbidity. Recently, coenzyme Q10 (CoQ10) has been suggested to be effective in the prevention of migraine. The aim of this study was to evaluate the efficacy of CoQ10 supplementation in the prevention of migraine. MATERIAL AND METHOD: MEDLINE and EMBASE were searched for studies regarding the effect of CoQ10 on patients with migraine. We required the studies to report the number of migraine attacks per month. Results presented in delta mean frequency of migraine attacks (Δ) and significance level (p). RESULTS: Four studies (2 double-blind randomized controlled trials, 1 open label controlled trial, and 1 clinical trial) published between 2005 and 2016 with a total of 490 patients were included. CoQ10 was used with dose 1-3 mg/kg/day for pediatric patients and range of dose between 100 mg and 300 mg for adults. Timing of administration varies from 97 days, 12 weeks, and 4 months. Based on the available studies, administration of CoQ10 for pediatric patients was statistically significant to decrease delta mean frequency of migraine attacks in 97 days (Δ 6.7, p < 0.001) and 12 weeks compared to placebo (respectively, Δ 7.4 vs Δ 5.4, p = 0.03). As for adults, administration of CoQ10 100 mg/day and 300 mg/day in 4 months was statistically significant to decrease delta mean frequency of migraine attacks compared to placebo (respectively, Δ 6.8 vs Δ 3.4, p = 0.01; Δ 1.2 vs Δ 0.1, p = 0.01). CONCLUSION: Based on the available studies, administration of CoQ10 was beneficial to reduce the delta mean frequency of migraine attacks per month compared to placebo.

ID: NeuroConf2018_10012
Title: Characteristics of Restless Legs Syndrome Patients with Very Low Ferritin
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Abstract:
Introduction: Restless legs syndrome (RLS) is associated with dopaminergic dysfunction and iron deficiency manifesting as low ferritin. However, ferritin level did not well correlate with demographic data or clinical symptoms. Based on the hypothesis that very low ferritin can more accurately reflect clinical information, we herein described characteristics of RLS patients with ferritin under 10 ng/mL. Methods: RLS patients who visited a single tertiary center between Aug. 2014 and Oct. 2017 were retrospectively reviewed. Clinical information collected included demographic information, medical history, sleep questionnaires, and laboratory test results of ferritin and hemoglobin. Sleep questionnaires included Pittsburgh Sleep Quality Index, Epworth Sleepiness Scale, Insomnia Severity Index, Beck Depression Inventory, International RLS study group rating scale, and RLS Quality of Life scale. RLS patients with ferritin under 10 ng/mL (VLF group) were compared to those with ferritin over 10 ng/mL (Non-VLF group). Efficacy of iron therapy was evaluated using clinical global impression (CGI) rating scale. Results: Total 184 RLS patients were screened and 12 patients belonged to VLF group. VLF group were younger (44.4 $\pm$ 14.4 vs. 61.1 $\pm$ 13.7, p < 0.001) than non-VLF group. VLF group included more females (91.7% vs. 58.9%, p = 0.052) and had earlier symptom onset age (37.4 $\pm$ 14.3 vs. 47.6 $\pm$ 17.6 p = 0.062), although not statistically significant. VLF group showed lower hemoglobin level than non-VLF group (11.5 $\pm$ 1.9 vs. 13.5 $\pm$ 1.5, p < 0.001). Especially, VLF group revealed much better responses to iron therapy than non-VLF group by CGI scale (1.5 $\pm$ 0.7 vs. 2.9 $\pm$

1.0, p < 0.001). Previous medical history, family history and sleep questionnaires did not differ between two groups. Conclusions: RLS patients with very low ferritin under 10 ng/mL showed distinct responses to iron therapy compared to the patients with ferritin over 10 ng/mL. In addition, they had young-age onset and female-dominance, but did not revealed definite clinical difference in medical history and sleep or RLS symptom complaints. Further studies on more patients with long-term follow-up are warranted to support this observation.

Part V   Instructions for Presentations

Oral Presentation

Devices Provided by the Conference Organizing Committee:

- Laptops (with MS-office & Adobe Reader)

- Projectors & Screen

- Laser Sticks

Materials Provided by the Presenters:

- PowerPoint or PDF files

Duration of each Presentation:

- Regular Oral Session: 10 Minutes of Presentation

- Plenary Speech: 30 Minutes of Presentation

Poster Presentation

Materials Provided by the Conference Organizing Committee:

- X Racks & Base Fabric Canvases (60cm×160cm, see the figure below)

- Adhesive Tapes or Clamps

Materials Provided by the Presenters:

- Home-made Posters

Requirement for the Posters:

- Material: not limited, can be posted on the Canvases

- Size: smaller than 60cm×160cm

- Content: for demonstration of the presenter's paper

Requirement for the Presenters:

Stand beside his (her) Poster through the Session, and discuss with the readers about his (her) paper

Part VI   Hotel Information

About Hotel

Arnoma Grand Bangkok (曼谷阿诺玛酒店) situated in the heart of Bangkok's Central Business area and surrounded by some of Bangkok's most prestigious Business Addresses, Arnoma is also across the road from Centralworld's 400 Shops and Restaurants, close to some of Asia's most renowned Designer Malls, and just around the corner from the BTS Sky train which will whisk you all over Bangkok in minutes.

Located in the popular Siam / Pratunam area, Arnoma has 369 Rooms and Suites, a selection of modern, flexible Meeting Rooms – including a Ballroom capable of seating up to 800 in Theatre Style – and great dining options including Bistro 99 which serves cutting edge, Modern Thai Cuisine, the award winning Good Earth Chinese Restaurant, Felice Italian Restaurant and a buzzing Wine Pub.
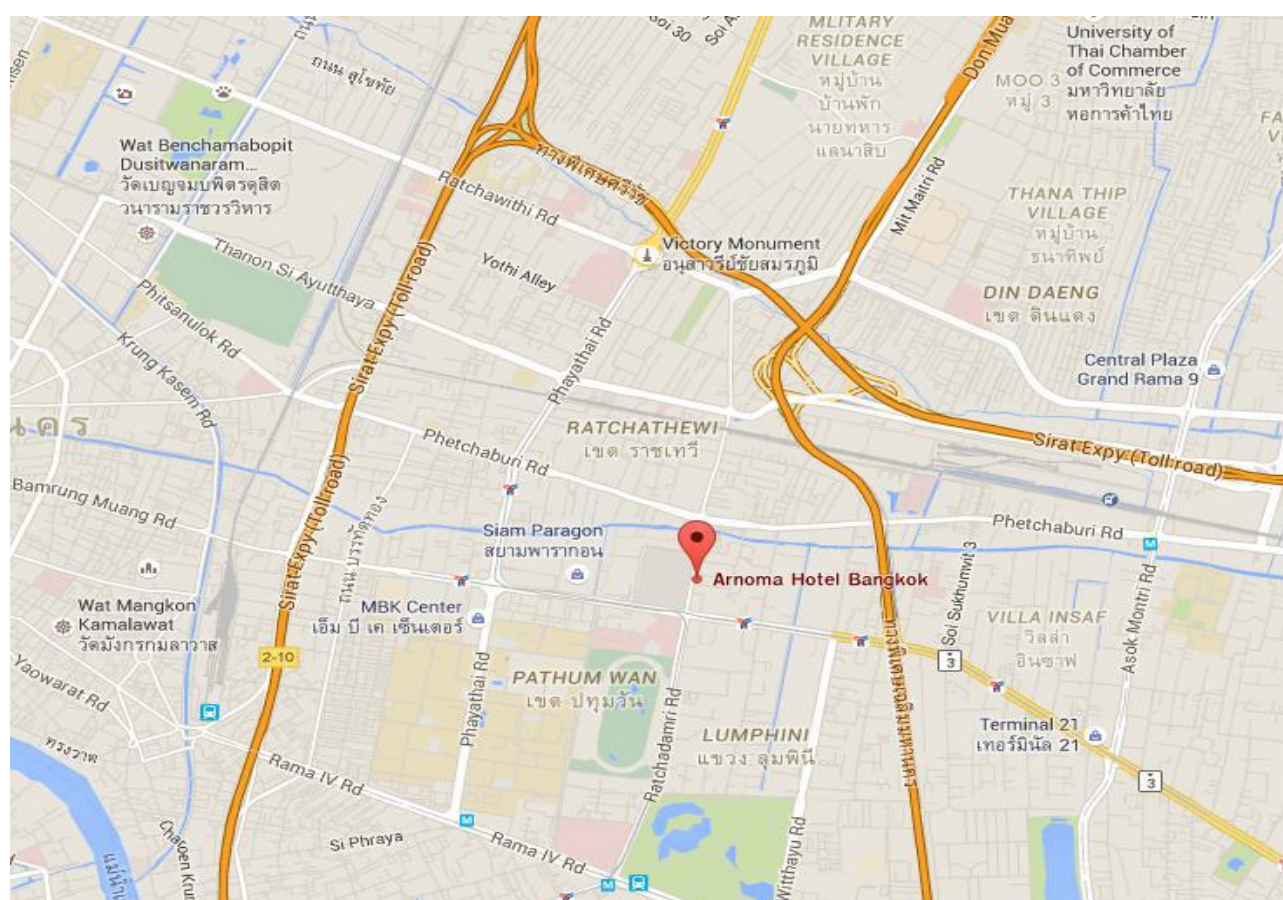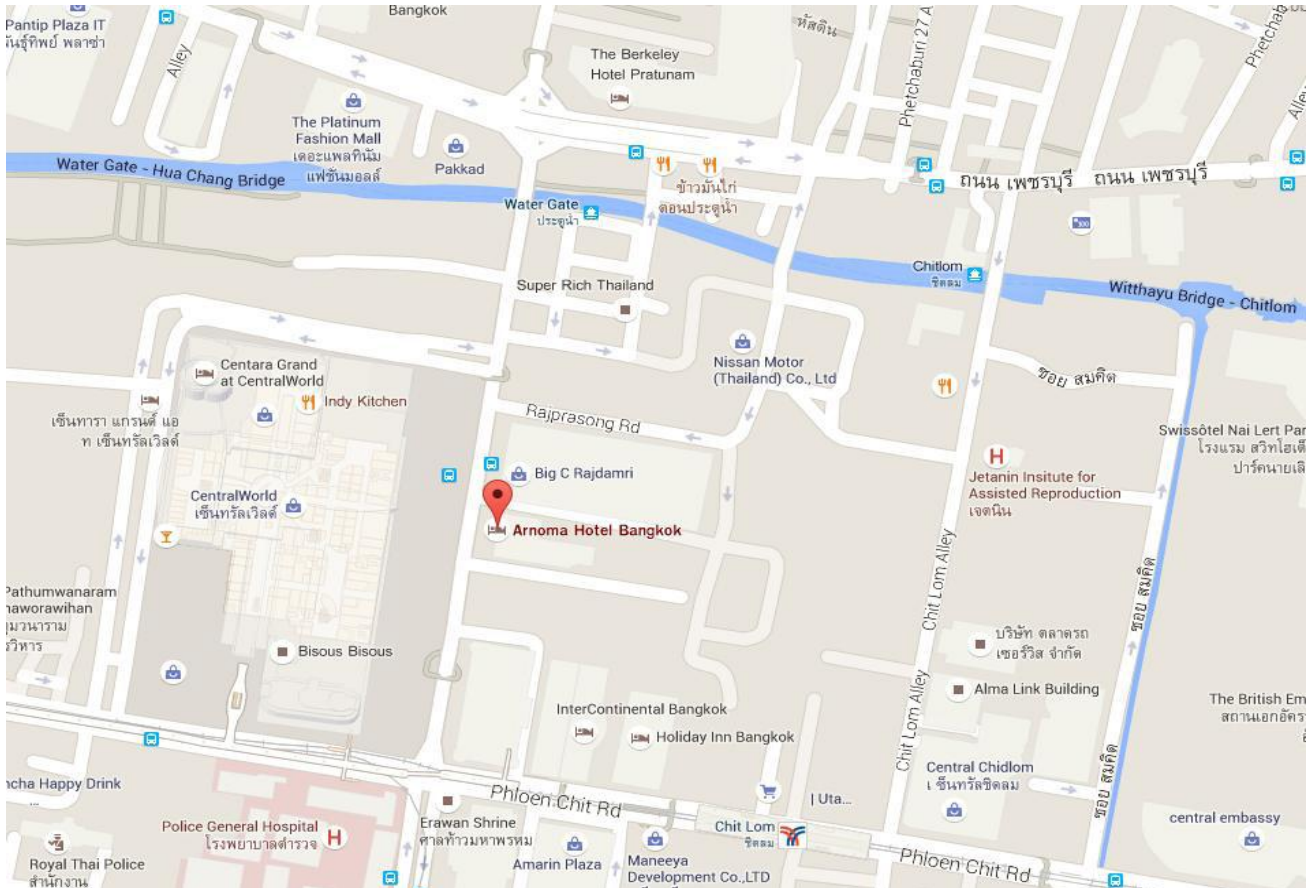
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