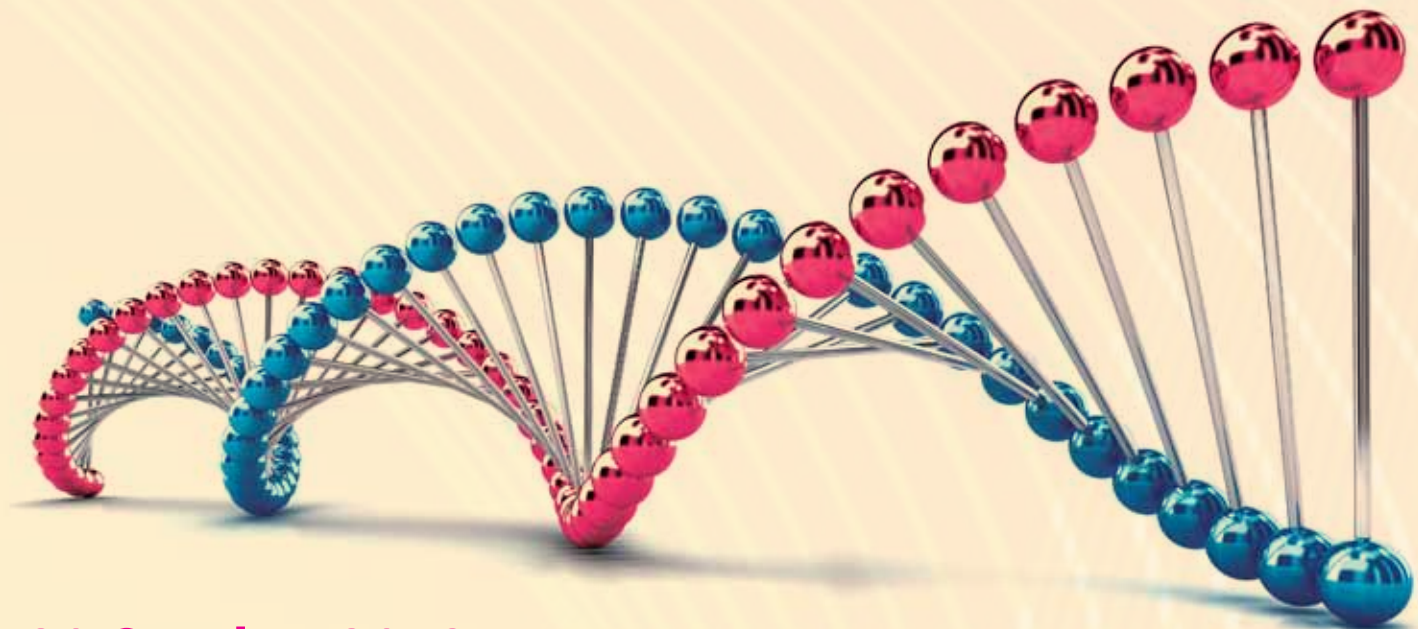


ChemCareers India

THE CAREERS FAIR WITH A DIFFERENCE



20 October 2012

Institute of Chemical Technology, Mumbai, India

Due to its great success in the UK, the RSC is bringing ChemCareers to India. Known as the *careers fair with a difference*, this free event focuses purely on the chemical sciences and gives exhibitors a chance to:

- Network with a wide range of graduates
- Strengthen brand awareness among students
- Display collateral and showcase technologies
- Present to all event delegates

To find out more about **ChemCareers India** or to secure a stand, please contact Dr V K Rathod via email vk.rathod@ictmumbai.edu.in or call +91 22 33612020.



Celebrating 80 years of promoting chemical sciences

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BRITISH
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RSC | Advancing the
Chemical Sciences

<http://my.rsc.org/chemcareers/india>

Registered Charity Number 207890

CHEMCAREERS INDIA 2012
Institute of Chemical Technology (ICT), Mumbai, October 20, 2012

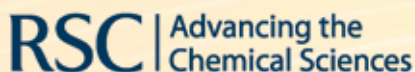
0900-0930	Registration	
	HALL NO 1	HALL NO 2
0930-1030	INAUGURAL SESSION Professor G D Yadav, Vice Chancellor, Institute of Chemical Technology Professor David Phillips, Immediate Past President, Royal Society of Chemistry Dr Arup Basu, President, Tata Chemicals Mr S R Lohakare, Chairman, Western Region, Indian Chemical Council MrSam Harvey, Director British Council	
1030-1100	Tea break	
1100-1125	Emerging trends in Agro-sciences Nadir Godrej, Chairman, Godrej Agrovet	Opportunities in Petrochemicals sector, AjitSapre, Reliance Industries
1125-1150	Exciting research opportunities in India Professor K N Ganesh, Director, Indian Institute of Science & Education Research Pune	Emerging areas in personal care Mohamed Kanji, Vice President, R&D, O'Real, India
1150-1215	A world of flavours and fragrances Ajit Pal, Managing Director, Givaudan	Careers for women in Chemical Sciences Dr (Mrs) Lakshmi Kantam, Chief Scientist, Indian Institute of Chemical Technology
1225-1250	New careers in Green Chemistry Professor S Chandrasekaran, President, Chemical Research Society of India.	A glimpse on Speciality chemicals scenario in India Dr K M Shah, President, Indian Special Chemical Manufacturers Association
1250-1400	Lunch	
	Hall 1	Hall 2
1400-1500	Presentations by exhibitors and partners	Presentations by exhibitors and partners
1500-1630	Workshops conducted by British Council : 1. Resume writing & Tips on facing interviews 2. Drafting statement of purpose & References	
1630-1700	Tea break	
1700-1730	SPECIAL LECTURE: Professor M M Sharma, Emeritus Professor of Eminence and former director, UDCT/ICT	



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Givaudan®



Welcome to the ChemCareers India 2012, the first ever career event hosted for chemical science, engineering and technology graduates in India. This event, aimed at promoting varied careers open to graduates, is brought to you jointly by Institute of Chemical Technology, Royal Society of Chemistry and British Council India.

Contrary to popular perception, chemistry and chemical engineering is critical for survival and growth of modern society and answer to many of global challenges such as healthcare, water, energy, environment, transport and affordable housing, all hinged on the development of chemical sciences.



Following its immense success in the UK, the RSC felt that India, which is growing economy in the world, is place to host this place, particularly at ICT.

This event is being organized following a recommendation to support career development made by the UK-India Developing Talent in the area of Chemical Sciences report, which was published by the RSC and Chemical Research Society of India. The report, which was released last year, had detailed recommendations for increased collaboration in scientific research, strengthening industry-academia partnership, joint development of skills, attracting and retaining talent, and supporting career development for the benefit of both the UK and India.

The ICT, a premier institute in education, research and training, has been so intimately connected with Indian Chemical and Allied Industry over past 8 decades and indeed will march into its 80th Foundation Day on October, 2012. So ChemCareers is also a tribute to this great institute, which has also been spearheading and sustaining the culture of excellence in chemical science and engineering in service of society.

This will also present an opportunity for the Indian companies to network and meet potential graduates for recruitment and for graduates to explore career and study options available to them. Selected Graduates, post-graduates and PhDs from all leading institutes will be available for employment. We are glad to know that the UDCT Alumni Association (UAA) has also lent its support.



As part of the ChemCareers India, several activities including a day-long symposium on career opportunities, exhibition by industry and presentations by companies such as Tata Chemicals, Reliance Industries, Godrej Industries, l'Oreal, Givaduan, Viswaat and Rave Technologies.

The symposium will include talks/lectures on emerging and current job opportunities in the area of chemical sectors such as pharma, energy, personal care and petro-chemicals and development of soft skills such as resume writing for graduates and tips on how to face interviews.

We hope that the students and companies will find ChemCareers very productive and rewarding. We hope that this will be prelude for future similar events across the country.

Professor G D Yadav and Dr. Alejandra Palermo.

INSTITUTE OF CHEMICAL TECHNOLOGY

(Deemed University under Section 3 of UGC Act of 1956)
(Elite Status and Centre of Excellence – Govt of Maharashtra)



Established on October 1, 1933, the Institute of Chemical Technology, Mumbai (formerly called as the UDCT – University Department of Chemical Technology, University of Mumbai) with the noble intention of advancing India's knowledge reserves in chemical science and technology, the Institute has grown to become a **premier (deemed) university devoted to education, training, research and industrial collaboration in chemical engineering, chemical technology, applied chemistry, pharmacy, biotechnology and bio-processing**. The list of achievements of this great centre of learning is voluminous and ever since its inception, the Institute has been a fertile breeding ground for some of India's most gifted minds. **The Institute's alumni have distinguished themselves in all walks of life, be it in industry, academia, government or public service in India as well as abroad.** Some of the rare international honours have been bestowed upon them and some have been role models, serving the nation. The UDCT grew in stature over the years and was granted partial autonomy by the University of Mumbai in 1985, which was taken to the next echelon under the concept of autonomy propagated by the University Grants Commission (UGC). Upon a strong recommendation of the UGC through a peer review process, the autonomous institute status was finally converted in to a Deemed-to-be-University by the Ministry of Human Resource Development (MHRD), Govt. of India, on 12 September 2008; a strong recommendation was made that the ICT should be fully supported and its activities strengthened by the Government and the new (deemed) University should commence its functioning from academic year 2009-10. Based on its track record over the years and splendid performance measured by international yardsticks, the Govt of Maharashtra made a declaration in the State Assembly on April 20, 2012 that the ICT was granted Elite Status and Centre of Excellence on par with IITs, IISc and IISERS.

Currently, the ICT has on its roll 1080 UG students, 380 Masters Students and 687 Ph D students with full fellowships.

It is a unique Deemed University, with unparalleled record, funded by the State of Maharashtra, receiving various grants and projects from the UGC, DAE, DBT, DST, CSIR, ICMR, MFC, MOEF and other agencies including Indian and foreign industries. Several Centres of Excellence have been created through the support of central agencies, which have been mainly responsible to nurture quality in education and research.

The Institute's **strong multi-disciplinary research programmes** have helped create a unique learning environment that places great emphasis on synergizing knowledge from several sources to develop creative and effective solutions to many of the problems faced in industry and society and it this eclectic combination of a rigorous and up-to-date curriculum, excellent laboratory and demonstration facilities, world-renowned faculty and a conducive learning environment brimming with the next generation of great minds that sets the Institute apart from its competitors. The ICT is held in high esteem by other premier institutes, industry and government for many of its unique characteristics and achievements. **The magic mantra for the ICT's success is a concoction of dedicated faculty, meritorious students, admirable support staff, distinguished alumni, strong connectivity with industry, and assistance to all needy students, a grand alumni association and above all relevance of our courses in wealth creation. It is unsurprising thus that the Institute of Chemical Technology is ranked as the best chemical engineering and chemical technology teaching and research institute in India and among the 10 top institutions in the world** in an annual ranking of chemical engineering programs conducted by the Georgia Institute of Technology, USA.

1. The ICT has produced a galaxy of students who have excelled in all walks of life. Over 500 alumni have started their own industries or businesses. Some of top industrialists are alumni of ICT. Many distinctions and accolades including fellowships of prestigious foreign academies and Padma awards have been bestowed upon ICT alumni.
2. The MHRD had evaluated all deemed universities in 2009 and granted "A" grade only to 38 universities among 135. The ICT is rated with "A" grade. It is the only one among 4 in Maharashtra State, the other 3 being centrally funded TIFR, TISS and CIFE.
3. The ICT has also been rated as Number One Institute by National Project Implementation Unit (A Govt. of India Unit for World Bank Assisted Project for Technical education) in its study on 'Impact Evaluation of Technical Education Quality Improvement Program (TEQIP – I)' among 127 World Bank's TEQIP funded Institutes, all over India published in October, 2010.
4. Biospectrum magazine in August 2011 has also rated ICT's programme as Number One among all biotechnology programmes in the country.
5. A survey was published by Professor Jude Sommerfeld of Georgia Tech., USA in January 2012 showing that the ICT is Number One Institute in India far ahead of several others including IITs, and it is also at number 4 in the world.
6. Very recently the UGC decided to recognize faculty who has supervised as single guides at least 15 Ph.Ds. The ICT has a record of 13 academics who qualified for special grants. The Vice Chancellor Professor G. D. Yadav is the topmost among all academics with supervision of 63 Ph.Ds. and 68 Masters degree holders. He is the only serving faculty in the State to be a Fellow of the TWAS- the Academy of the Developing World, Trieste, Italy, including Fellowship of INSA.
7. The ICT produced 100 Ph.D.s during 2009-10 which is record for any institute in India engaged in chemical engineering and technology. Incidentally, the first ever Ph.D. in Engineering and Technology in India was given by us in 1942. It also holds more than 100 patents. The ICT has been chosen as the lead institute from India in the Indo-US Virtual Centre in Energy Biosciences.
8. The Indian National Science Academy (INSA) has accorded its first ever Best Teacher Award under the age of 55 to Professor A.B. Pandit in 2012.
9. The number of peer-reviewed quality research publications and citations emanating from the ICT is also the highest in the country. There are over 40,000 citations for publications in high impact factor journals during last 10 years; three faculties have more than 4000 citations each and all of them are fellows of Indian National Science Academy, the most prestigious Science Academy in the country. The survey in Current Science (Vol. 97 (3) 303-6 Aug. 10, 2009) places ICT as number 13 in terms of total number of papers, among all elite institutes such as IITs, IISc and NITs, all which have much larger faculty, research students, branches of studies and liberal funding by the Central government. **Indeed, the ICT, with a meager budget, is number one in terms of publications and citations per faculty in the country and in world as well.**

The Royal Society of Chemistry is the UK Professional Body for chemical scientists and an international Learned Society for the chemical sciences with some 47,500 members worldwide. It is a major international publisher of chemical information, supports the teaching of chemical sciences at all levels and is a leader in bringing science to the public. The RSC, with over 380 employees, has global offices in Philadelphia, Beijing, Shanghai, Bangalore, Tokyo and Sao Paulo, Brazil.

RSC in India:

The RSC opened its office in Bangalore in September 2010 as part of the society's continuing drive to expand its international network in publishing, scientific and educational activities. The India office is located at British Deputy High Commission in Bangalore and will serve to build a stronger relationship with the Indian scientific community, the Chemical Research Society of India (CRSI) and therefore, expanding the RSC's global network.

The **British Council** is the UK's international organisation for cultural and educational relations. We work in more than 100 countries worldwide to build engagement and trust through the exchange of knowledge and ideas. In India, the British Council is a division of the British High Commission and works in the arts, education and society, and English and exams.

Collaboration underpins everything the British Council does in India: from fostering educational and research links between universities to forging connections between the brightest emerging creative entrepreneurs, to supporting collaborations between arts organisations. We work with myriad partners in both countries to build bridges between India and the UK. For details of our work in India, kindly visit www.britishcouncil.org.in

C-Drive HR Services Pvt.Ltd., is a specialist HR services company, headquartered in Bangalore, catering exclusively to companies engaged in Research and Development involving Chemistry or Biology.

The uniqueness of C-DRIVE, stems from its deep foundations and network in Science, particularly Chemistry and Biology. Our team comprises erstwhile 'Scientists' with PhD's and Masters degrees, who have transitioned to contribute to the HR and Recruitment aspects of Science based organizations.

Over the past 5 years, C-DRIVE has grown into the 'choice' niche HR partner for companies across Pharmaceuticals, Food, Personal Care, Specialty Chemicals, Biotechnology, Biofuels, Medical Devices, Agrochemicals, et al. We understand the key drivers of organizational success: Science, Business and People, and our track record stands testimony for this.

In 2008, CDRIVE joined hands with ABLE (Association of Biotechnology Led Enterprises) the premier Biotechnology Industry body in India, and launched ABLE CDRIVE to cater to the hiring needs of the Biotechnology community.

We are proud to be an organizing member of ChemCareers 2012 and look forward to a wonderful event which brings the Chemistry World in India together.

The Beauty and Charm of Chemical Sciences, Engineering and Chemical Industry and Their Revolutionary Impact on Modern Society



Professor Dr. G. D. YADAV,

FTWAS, FNA, FNASc, ChE, FICHEM(UK), FIChE, FICS, FMASc

Vice Chancellor and R.T. Mody Distinguished Professor

J.C. Bose National Fellow (DST-Govt of India)

INSTITUTE of CHEMICAL TECHNOLOGY

MUMBAI-400019

Email: vc@ictmumbai.edu.in; gd.yadav@ictmumbai.edu.in

How did you begin your day today? Did you begin it without using or touching toothpaste, shampoo, soap, shaving cream, perfume, towel, colourful synthetic attire, spectacles, mobile phone, shoes, purse, wallet, or for that matter without reading any news paper? Did you have your breakfast? How was it prepared? Which gadget was used to prepare it? Did you travel to the office without using a bus, train, or bicycle? Did simply walk barefoot to your place of work or school or wherever was your destination? Will it be true that you never took any medicines in your entire life? You home is never painted. You never use an umbrella or raincoat. Will it be true that you never watch TV or listen to radio, or for that matter you never heard the public announcements on railway platforms?

If the answers to all these questions are yes, then you need not waste your time on listening to me. You perhaps belong to an era more than 1000 years ago? Why go that far, perhaps 100 years. On the contrary, if you use any of these materials in your daily chore and cannot think life without them, then let me take through the marvels of chemicals and materials. These are all creations of chemistry and chemicals and materials which are processed using technologies

having origins in chemistry and chemical engineering and technology. From dawn to dusk, from cradle to crematorium, from top to toe, from home to office, even in dreams, we live in the wonderful world of chemicals, about which there is so much confusion and misunderstanding.

Believe me we will return to the cave age to protect our modesty and have to use leaves, if we do not make new materials, whether from natural resources or fossil fuels.

The basic needs of civil society have been food, shelter, clothing, transport and communications. Now instant communication and instant gratification; all dependent on the produce of the chemical and allied industry. The world's population today stands at about 7 billion. In the year 1 AD it was 20 crore, in 1000 AD 27.5 crores, in 1804 AD 1 billion, in 1850 1.2 billion, in 1900 1.6 Billion, in 1950 2.55 billion, in 1999 6 billion, and in 2011 7 B. India is 121 crore people. The global population in 2025 will be 8 billion and 9 billion in 2043.

The average life expectancy in India in the year 1900 was 38 years for males and 43 years for females. Women would become grandmothers by the age of 30 then. Now the global average has gone up to seventies and eighties. In India, males live up to 68 years and females 73 years. Not only people are living longer, they are living healthier. More and more people are moving towards urban areas and there is a tremendous stress on civic infrastructure. The tillable land is shrinking day by day. We are living in tall multi-storey buildings, as if touching the sky. How are we going to feed so many people, meet their energy and material needs, how are we going to control pollution? The sustainable development means to meet the demands of the current generation without compromising on the ability of the future generation. This is where the role of chemical sciences, engineering and technology becomes critical.

The year 2011 was celebrated as The International Year of Chemistry and the public needs to be educated about its impact on modern society. Madame Mary Curie got her Nobel prize in Chemistry in 1911. Chemistry is a creative science essential for clean technology, sustainability, prosperity and most importantly, sustainable development. Tomorrow's society will face innumerable challenges with reference to material and energy needs. No virtual world can be created without materials produced by niche and eco-friendly technologies. We all live in the world of chemicals, molecules, if you may, and products, which are transformed to give quality and longevity to life.

In this context, let me direct your attention to the "Grand Challenges" outlined by the US Academy of Engineering for the 21st Century, which include:

1. Advancing health informatics;
2. Engineering better medicines;
3. Making solar energy more affordable;
4. Providing access to clean water;
5. Reverse-engineering the human brain;
6. Advancing personal learning;
7. Engineering tools for scientific discovery;
8. Managing the nitrogen cycle;
9. Providing clean energy from fusion;
10. Securing cyberspace;
11. Developing new methods of carbon sequestration or reducing CO₂ emissions and reducing the carbon foot print ;
12. Enhancing virtual reality;
13. Preventing nuclear terror;
14. Restoring and improving urban infrastructure.

Of these 14 grand challenges, a dozen are directly or indirectly connected to chemical industry. There is confluence of chemical sciences with biological sciences and thus all chemicals can be looked at as molecules. Believe me, no biotechnological process can be materialised without the use of chemicals. The attractive colours you want is chemistry, the voice you hear on radio or in disc or floppies or memory devices, like USB drives are made from polymers-polycarbonates, the computers which you use, need highly pure silicon, fine carbon nanotubes, and some of the finest polymers made from monomeric chemicals. The soaps, perfumes and detergents are chemicals. The fertilizers needed for improving crop yield are chemicals. We need better crops, more produce from less land and hygienic food. Better crop varieties can be created through genetic modification. Otherwise feeding billions of people with nutritious

food will be impossible. The pesticides that are needed to protect crops are chemicals. 33 % of world's crops are eaten by pests. The only problem is with the use of chemicals is the right dose and form must be known. Excessive or indiscriminate use of fertilizers or pesticides could be harmful. Anything in excess is bad. Even medicines taken beyond prescribed dose will be lethal.

Only science can provide the answers and the fears of ill effects can be answered by science. In 1910, there was a hue and cry against use of X-rays in New Jersey because people thought it would be a jolt to woman's privacy and modesty. So much so NMRI- Nuclear Magnetic Resonance Imaging has been simply called MRI. Today X-ray scans and MRI are used rampantly to make the public feel safe. The word 'Nuclear' is cleverly dropped.

In today's energy and material conscious world, all processes must be clean and green. Green Chemistry is defined as "the invention, design and application of chemical products and processes to reduce or to eliminate the use and generation of hazardous substances. It is a fundamental redesign of the substances with the environmental impact at its core through waste minimization.

The material and energy demands of modern society hinge critically on the viability and progress of the chemical and allied industries that are central to many other sectors. Both nanotechnology and biotechnology depend so much on chemical processes.

The world chemical industries are experiencing massive changes as we have entered the 21st century. For both commodity and specialty chemicals there is growing demand worldwide that production ought to have less impact on the environment and that it moves toward long-term sustainability. Various treaties, legislations and programmes are directed at energy efficiency and efforts to reduce waste and develop sustainable production.

These days emphasis is being laid on use of biomass, renewable materials, biowaste, etc for producing energy and materials. This must be done without comprising on food supply. Whether corn, sugarcane, grass, jatropha or any such material is used for producing bioethanol or biodiesel, there has to be a fine balance. Nature has been the greatest source of inspiration and new technologies derive a lot from natural processes.

Synthetic chemicals and materials are no exception. Another issue the general public has misconception regarding use of plastic versus paper. The paper requires 1.5 ton of chemicals per ton of paper besides denuding forests. Biodegradable polymers and long lasting polymers must be understood properly. We see rampant pollution by plastic, which is polyethylene, because these bags are thin, long lasting but free. Anything free is treated as garbage and thrown. If such bags are charged or a deposit is levied, nobody will throw them. Plastic bags are polymers. They can be recycled and reused in the same form or another, can be depolymerised or energy could be extracted from them. Polymers are molecules that contain many atoms, typically tens of thousands to millions. While many polymers occur naturally as products of biological processes, synthetic polymers are made by chemical processes that combine many monomers, together in chains, branched chains, or more complicated geometries. Starch, cellulose, proteins, and DNA are examples of natural polymers, while nylon, Teflon, and polyethylene are examples of the synthetic variety. Both classes possess a number of highly useful properties that are as much a consequence of the large size of these molecules as of their chemical composition. Although most synthetic polymers are organic, that is, they contain carbon as an essential element along their chains, other important polymers, such as silicones, are based on noncarbon elements.

The rapid pace of advances in polymers, particularly after World War II, has been remarkable. Synthetic polymers are so well integrated into the fabric of society that we take little notice of our dependence on them, whether it is health, medicine, clothing, transportation, housing, defense, energy, electronics, employment, and trade. Without a doubt, synthetic polymers have large impacts on our lives.

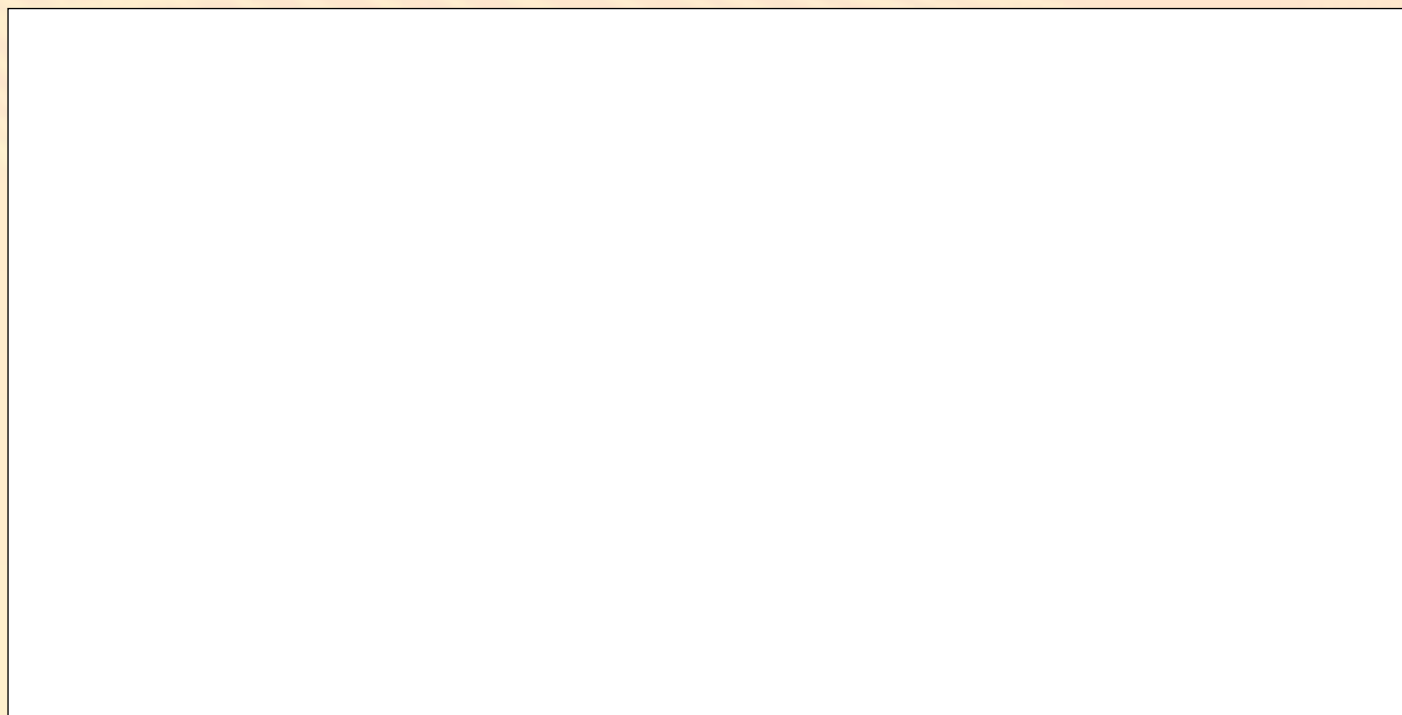
All cars and vehicles, aeroplanes have become lighter, their energy consumption has reduced substantial and better fuel efficiency is realized due to use of light-weight and tough plastics.

Synthetic chemicals are used to make virtually every man-made product and play an important role in daily life of people around the world. Such products can protect crops and increase yields, prevent and cure disease, result in longevity, allow faster modes of communication and transport, entertain, provide insulation to reduce energy use and offer countless other benefits that make life better for people. Many of these benefits are subtle. People enjoy all these benefits but do not give credit to the chemical industry and allied industries.

As with other large manufacturing industries, the chemical industry can also have a negative impact on human health and the environment when the production and use of chemicals are not managed responsibly. From the use of non-renewable resources for fuel and feedstocks (e.g. oil and gas), to the release of pollutants from factories during production, to the disposal of final products that contain hazardous waste, each stage of the lifecycle of a product produced by the chemical industry can affect man and the environment.

During the last two decades, spectacular progress has been made in understanding chemicals as molecules and the structure- activity relationships with reference to their properties which are exploited for specific end uses. These concepts and their applications –which are termed as "green chemistry, green technology, green engineering"- have infiltrated the chemical and allied industry and led to development of energy efficient and environment friendly technologies.

I am sure some of you have certainly celebrated the International Year of Chemistry with pride and conviction. Majority of household articles and kitchen sets you are using have been made by using over dozens of chemicals and materials derived or processed by using chemicals. Voice has colour, voice has fragrance and voice has chemistry in it. Believe me in the year 2100, death will not be a problem, but life will; because of the fantastic new chemicals and materials derived from the confluence of chemistry and biology that will prolong life as we hear in **Puranas**. If a man who slept in the year 1900 was to get up today, he would not die of old age but of shock due to the presence of things around him which he never dreamt even in his long sleep. Chemistry can certainly be proud of its achievements.



Research in the field of Chemistry affects our life every day, from the food we consume, to the water we drink, the medicines we take, the clothes we wear, the cars we drive and the energy we consume. While fundamental research in Chemistry strives to increase our basic understanding of how chemical reactions occur and how materials behave at the atomic level, applied research in chemistry aims at improving the quality of life through various products and services.

As Asia's contribution to the global chemical industry increases, India has emerged as a focus destination for global chemical companies. The Indian chemical industry, at \$108 billion, currently accounts for nearly 3% of the global chemical space and 7% of India's GDP. The Indian chemical industry is the 12th largest in the world and 3rd largest in Asia. Based on the Planning Commission's 5 year plan (2012-17) for the chemical industry, India will need 4.5 to 5 million skilled workers in the chemical industry by FY17 and 14,000 chemical engineers in the next 10 years in the specialty chemical industry alone.

India's chemical industry is diversified in terms of product categories. While the upstream sector includes manufacturing of chemicals and chemical products, the downstream sector includes industries that use chemicals. Some of these sectors are Pharmaceutical & Drugs, Petrochemicals & Plastics, Inorganic Chemicals, Agrochemicals, Specialty Chemicals, aerospace and automotive, construction and materials, energy, food technology, home and personal care, printing, textiles, water etc.

1. Chemists play a pivotal role in solving the most fundamental challenges facing society namely: **Energy** – (most of the current energy production is based on chemical technologies)
2. **Food**- (better processes for production, preservation and conservation).
3. **Health** – (synthesizing novel drugs/compounds, novel drug delivery systems, understanding biological processes at the molecular level for drug design).
4. **Environment** – (green routes to making chemicals and analytical equipments to forewarn about emerging problems; better processes – new methods in catalysis and synthesis & improvements in existing methods towards increased efficiency).

5. **Materials**- development of new materials including polymers in the areas of textiles, construction, automation to replace scarce and polluting chemicals.

Advanced analytical instrumentation combined with powerful computational tools are helping in the understanding of chemical kinetics, chemical & material synthesis and unravelling the mysteries of life processes at the molecular level.

Careers in Chemistry & Chemical Engineering

Agricultural chemists work on the synthesis of novel molecules for applications such as fertilizers or pesticides. They also study the impact as well as the chemical fate of agrichemicals on the environment. Today Agricultural Chemists along with biologists, agronomists & biochemists work together in the newer areas of agricultural-biotechnology. While fundamental research is being done in government laboratories, global players like Monsanto, Bayer, Syngenta, BASF etc also actively hire in this space.

Chemical engineers design and operate large scale manufacturing processes thereby translating lab research to production scale while being conscious of the scale, quality and cost. They are in demand across a wide range of industries ranging from Chemical companies, Pharmaceutical companies to Biotechnology companies.

Physical chemists apply physics and maths to solve problems at the atomic level and apply their research in the emerging fields of material sciences, molecular modelling and nanotechnology applications. They work across diverse areas like plastics, ceramics, pharmaceuticals, surfactants, colloids & personal care products.

Analytical Chemists are required in all aspects of research - cutting across sectors across academia, government and industry. Since, it involves studying, gathering and communicating data about the qualitative and quantitative composition and structural determination of matter, this finds application across pharmaceuticals, food & water, energy, environment, agrochemicals etc. In India, experts in analytical chemistry are hired across pharma companies such as Dr Reddy's, Piramal Enterprises Ltd., food & flavours companies like Hindustan Unilever, Givaudan, ITC, personal care companies like L'Oreal to biotech & agrichemical based companies like Biocon, Reliance, Praj, BASF, UPL etc.

In addition to these, specializations in chemistry can be in the area of food technology where process improvements in production of foods & in nutritive product development involve extensive chemical intervention and analysis. HUL, Nestle, GSK, Hienz, PepsiCo, ITC etc are major employers in the food sector. Similarly, chemists specializing in the area of oils & surfactants see multiple applications in the cosmetics, home and personal care, petrochemical and paint industry. Many FMCG companies hire chemists specialising in this area from the point of identification of input material to formulation of finished products.

Besides these, polymer chemistry finds applications in chemicals as well as the paint industry. Bayer, BASF, Asian Paints etc are leading players in this sector.

Additionally, there are niche areas in chemistry like textile chemistry, pulp-paper chemistry, environmental chemistry, geochemistry, forensic chemistry, petroleum chemistry, colloid & surface chemistry that cater to specialized industrial sectors.

To conclude, Chemists have a significant impact on our everyday life. To adapt a popular quote, Chemistry is the 'Invisible hand' that helps "Feed the World" (Food), Fuel the World (Energy), Heal the World (Pharmaceuticals) and Clean the World (Environment).

Just as the applications of chemistry are numerous so are the opportunities for this science.

Dr.Nitu Sood

Head – Delivery, C-Drive HR Services Pvt.Ltd.

There are many sources of funding available for studying in the UK – particularly for postgraduate students. The British Government and other UK organizations offer a range of international student scholarships and awards.

Scholarships managed by the British Council

Name of the scholarships	Level of education	Focus subject areas	Opening/Closing dates
Dr Manmohan Singh Scholarship www.britishcouncil.org.in/scholarships	PhD at University of Cambridge, St. John's College	Science & Technology, Economics, Social Sciences	Opening date: 1 Oct 2012 Closing date: 31 Dec 2012
The GOA EDUCATION TRUST (GET) SCHOLARSHIPS www.britishcouncil.org.in/scholarships	Any technical/vocational/academic course of study in the UK for up to one year	All	Dec/Jan
Commonwealth Scholarship and Fellowship Plan Scholarships: www.education.nic.in Fellowships: www.ugc.in	Scholarships: Post-graduation (Masters), Clinical Training in case of medical field, Split site PhD and PhD Fellowships: Nominations through UGC	Clinical training / Research Specialization / Engineering & Technology / Science (Pure & applied)/ Agriculture, Humanities	Opening date: July/ August Closing date: Oct
Charles Wallace India Trust www.britishcouncil.org.in/arts	Full term and short term scholarships	Visual and performing arts including art management, curatorship and museum studies as well as architectural and material conservation in the UK.	Opening date: July/ August Closing date: 9 November

The British Council Scholarships website can help you with your search www.britishcouncil.org.in/scholarships

Scholarships funded by other organisations:

The Rhodes Scholarships : www.rhodesscholarships.com

Inlaks Scholarship : www.inlaksfoundation.org

Felix Scholarship : www.ox.ac.uk; www.reading.ac.uk ; www.soas.ac.uk

Dorothy Hodgkin Scholarships : www.rcuk.ac.uk/hodgkin

Ford Foundation International Fellowship Programme : www.ifpsa.org

The Royal Society International Fellowships : <http://royalsociety.org/>

Commonwealth Shared Scholarships Scheme (CSSS) : <http://cscuk.dfid.gov.uk/apply/shared-scholarships/>

The Erasmus Mundus Programme : www.ec.europa.eu/education/programmes/mundus/index_en.html

UK universities also offer scholarships (fully funded and partial funding) directly. Please visit university websites for more information.

Why can't I access the RSC Careers Service?

In order to access the Careers Service you will need to be a member of the RSC. To become a member of the RSC, go to www.rsc.org/join.

If you are already a member of the RSC, but can't access the service you will need to upgrade your account to full access by submitting your membership number. A link to do so will appear in the bottom left of your profile page. If you have any problems with this, please email myrsc@rsc.org.

How do I book an appointment with a careers adviser?

The RSC offers members the opportunity to speak to a qualified careers adviser free of charge. All consultations are confidential and adhere to the National Information,

Advice and Guidance Board principles.

- Topics for discussion include, but are not limited to: Career exploration - planning your next steps and future options
- Changing jobs and/or career path - clarifying your ideas and evaluating alternatives
- Developing an effective job seeking strategy
- Advice on CV style
- Identifying your current skills and abilities and how to develop others relevant to your chosen career path
- Applying your past experience to today's job market

How do I write a CV?

In our Applications and Interviews section you will find information regarding CV and application form writing. Whether you are based inside or outside of the UK, we

also have presentations on CV writing in ChemCareers TV.

Finally, you could look at www.prospects.ac.uk or www.vitae.ac.uk which have additional information about academic CVs

How do I prepare for an interview?

Have a look at our webinar 'Survivors Guide to Interviews' in ChemCareers TV for advice on what to do to prepare and how to thrive in an interview. You might also like to book in for a mock interview using Skype. To book in email us at careers@rsc.org but please be aware

that although spaces are available throughout the week, they are limited!

I don't know what I want to do next in my career...

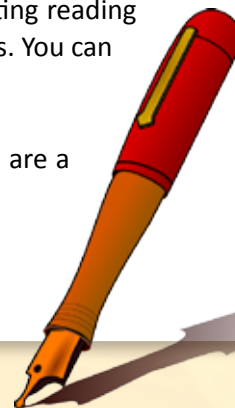
help!

First of all, breathe. Secondly I would recommend that you speak to a specialist adviser (see How do I book an appointment with a careers advisor above). The sections *Job Searching* and *Changing Direction* may be of help while waiting for one to one advice.



curriculum vitae

- 1 When using an email address make sure it is appropriate; I would recommend using your name@...
- 2 You don't need a photo, NI number, date of birth or marital status if you are applying in the UK
- 3 You don't HAVE to put a personal profile if you don't want to. Use these if you are changing sector as they can be useful but try not to just repeat word for word what you have in the main body of the CV. Use the space wisely.
- 4 Numbers, numbers, numbers...e.g. Provide face to face guidance to over 650 members in 2011 with regular feedback of >90% customer satisfaction
- 5 Keep a general CV - as long as you like and then use this to take the relevant bits for each application.
- 6 Try and stay to two pages for a non academic CV, you should use a skills based style if you have gaps in your CV, haven't worked for a while or are changing sector completely.
- 7 Make sure the information is relevant to the application e.g. you don't need to talk about GCSEs if you have a PhD
- 8 If you do any volunteering you can add in a section about it. If it is especially relevant you can add it in on the first page.
- 9 Hobbies are useful, try and keep them interesting e.g. avoid putting reading and socialising with friends; expand on them or use other hobbies. You can add in things like fundraising for charities if you do fun-runs
- 10 If you are struggling, ask for help....we will review your CV if you are a member free of charge.



A guide to interviews

You've got through the initial stages and bagged yourself an interview. Now the worry begins as to what questions you might be asked.

Preparation is imperative. If you can find someone to help you practice, this is a good option. Get a friend to ask questions, as they would in an interview, if you can get a camera it is sometimes useful to observe yourself to see if you fidget or say 'erm' a lot... Follow and practice the STAR model:

Situation

Task

Action

Results

Have a couple of answers prepared so that you can deliver them clearly, this will calm your nerves and allow you to be confident. There are lots of places to find interview questions, including the net, your careers service if you are at university, books and I have listed some common ones below:

1. Why did you leave your last job?
2. Are you a team player?
3. What would your colleagues say about you?
4. What are your weaknesses?
5. Why do you want to work for us?
6. Can you tell me about a challenging situation you have faced and how you dealt with it?

The main things to remember are to be honest, keep it short and try and turn any negatives into a positive e.g. 'I used to be disorganised but I have bought a diary to help my time management'

Don't be afraid to admit your faults, you are only human after all e.g. 'I left my previous role because when I got into the job it became apparent that I was not suited or qualified for the role'. Remember, admitting that it was not the right job for you is not a bad thing. It shows that you are self aware.



L'Oréal, A world leader in beauty products was created in 1909 by Eugène Schueller, a visionary chemist with a tremendous entrepreneurial instinct. For the past century, L'Oréal has pursued a tireless quest: respond to desire for well-being of millions of men and women and give every person the right to beauty by making it accessible.

With consolidated sales of €20.34 billion in 2011 and presence in 130 countries, L'Oréal has a global workforce of 68900 employees and has registered 613 patents in 2011.

- Recognized by the Ethisphere Institute as one of the “World’s Most Ethical Companies”
- Recognized as one of the 50 “Most Admired Companies” by Fortune Magazine for 2010
- Recognized as one of the 50 most attractive employers by Universum for 2010

L'Oreal India was started in 1994 to offer everyone in India, the best of cosmetics in terms of quality, efficacy and safety; and to make beauty accessible to everyone by offering products in harmony with their needs, culture and expectations. L'Oréal is committed to carrying out its mission to make beauty universal in a sustainable and responsible way. A highly exacting challenge, which L'Oréal is taking up step by step, in a long-term perspective, with the active involvement of all its employees. L'Oréal's ambition is to be an exemplary corporate citizen.

L'Oreal has been present in India for the past 18 years and in order to cater to the Indian needs has launched several brands covering various product categories, including: mass consumer brands Garnier, L'Oréal Paris and Maybelline New York; luxury brands Lancôme, Yves Saint Laurent, Kiehl's, Ralph Lauren, Giorgio Armani and Diesel; professional brands like L'Oréal Professionnel, Matrix, Kérastase and Kéraskin Esthetics for salons and pharmacy brands Vichy and La Roche-Posay.

L'Oreal is in the process of creating a research and innovation centre dedicated to carry out research and design products to meet the requirements of the Indian consumer.

Interested in a career at L'Oreal, please email your CV to nbhoite@rd.loreal.com

Contact Person: Niilesh Bhoite

Email Address: nbhoite@rd.loreal.com

Address:

L'Oreal Research and Innovation, Universal Majestic,
Ghatkopar – Mankhurd Link Road,
Chembur, Mumbai: 400071.

Truly, Global Supplier to Global Brands

Galaxy has worked diligently to meet the requirements and needs of different personal care brands around the world. This has helped the brand to broaden its vision and made the company a “Global Supplier to Global Brands.”

*We have developed numerous specialty products in the field of **UV filter, Mild surfactants, Conditioners, Betaines, Protein, Protein derivatives and Botanicals.** Galaxy has acquired a deep pool of knowledge that enables the company to anticipate and meet the needs of customers all over the world. The ultimate aim of our innovation is the product efficacy and how that benefits customers world wide.*

Today we have six manufacturing locations in India, one in Egypt and USA to cater to the growing needs of our customers across the globe.

Galaxy Surfactants Limited.

Corporate Office: C-49/2, TTC Industrial Area,
Pawne, Navi Mumbai-400 701, India.
Ph: +91-22-65134444/27616666
Fax: +91-22-27615883/27615886
Email: galaxy@galaxysurfactants.com
Website: www.galaxysurfactants.com

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Viswaat Chemicals Limited, (VCL), is a premier chemical company associated with the development, production and supply of chemicals for leather, textiles, surfactants and other specialty chemicals based industries such as pharmaceuticals, oil and gas, cosmetics, paper and construction.

We have developed a state of art facility at Ambarnath, near Mumbai, wherein we have the facilities for manufacturing various types of chemicals under complex manufacturing processes like ethoxylation, propoxylation, esterification, chloro - sulphonation, phosphitation, condensation, distillation, spray drying etc. This has been possible because of our commitment towards continued investments in the field of research and development wherein a fully functional lab scale production facility has been set up for synthesis and characterization of various chemical ingredients which in turn helps to reduce the cycle time for eventual successful commercialization of the new products. Investments have also been done to facilitate safe storage and handling of the various bulk raw materials and finished goods.

Our proximity to the city of Mumbai in the western coast of India, gives us an edge over our competition in terms of accessibility. In addition to our advantage in terms of the geographical presence we have our marketing reach spread across India, comprising a team of highly trained man power and well developed distributor's network. This stands testimony to our year on year growth of our company.

Contact person:

Pravinkumar Shetty,

Deputy Manager – HRD

Viswaat Chemicals Limited

7 , Satsang Complex, Upper Govind Nagar

L.S Raheja Marg, Malad (East)

Mumbai – 400097

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TNQ Books and Journals is one of the leading providers of publishing services to publishers of Scientific, Technical and Medical (STM) content worldwide. Leading customers include Cambridge University Press, eLife, Elsevier, Lippincott Williams & Wilkins, Oxford University Press and Royal Society of Chemistry.

TNQ has two production facilities in Chennai with over 1850 people who edit, polish and typeset hundreds of thousands of manuscripts from authors around the world, automating aspects of the production process for better quality and higher efficiency.

Technology-led, TNQ has a team of over 150 software professionals providing process automation, workflow solutions, and software products, platforms and services for the unique needs of STM publishers, in an increasingly online world.

Very conscious of its Corporate Social Responsibility, TNQ engages with society in many ways, one of the more notable ones being the Cell Press-TNQ India Distinguished Lectureship Series, an annual lecture tour across India, that has in the recent past featured Nobel Laureates David Baltimore and Elizabeth Blackburn, besides Shinya Yamanaka, the celebrated stem cell researcher.

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from discovery through development, to the emotional
pleasure and celebration of the final product.
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www.givaudan.com

Givaudan is the global leader in the fragrance and flavour industry, offering its products to global, regional and local food, beverage, consumer goods and fragrance companies.

Headquartered in Vernier Switzerland, Givaudan holds a 25% market share in an industry which is valued overall at around CHF 17 billion. We have been listed on the SIX Swiss Exchange since June 2000 and are one of the country's 30 largest companies in terms of market capitalisation.

In 2011, Givaudan achieved sales of CHF 3.9 billion, with a workforce of over 8,900 employees and subsidiaries in 45 countries. It has a presence in all major markets and a network of 82 sites in mature and developing regions.

Givaudan commits significant investments to cutting-edge research and development programmes as well as consumer understanding tools to remain the leading innovator in the industry. We invest more in research and development than any other company in the industry and we have the heritage, scale and the supply chain to serve worldwide customers seamlessly with innovative products and concepts.

Givaudan operates through two integrated divisions – Flavours and Fragrances Divisions, combining a rich legacy of experience with state of art technology in its aim to be the leader in sensory innovation and to create added value for its customers.

Flavour Division

We are a trusted partner to the world's leading food and beverage companies, combining our global expertise in sensory understanding, analysis and consumer-led innovation in support of unique product applications and new market opportunities. From concept to store shelves and quick-serve restaurants, we work with food and beverage manufacturers to develop flavors and tastes for market-leading products across five continents. Our Flavour Division has four business units: Beverages, Dairy, Savoury and Sweet Goods.

Fragrance Division

Our perfumers create fragrances for the world's most respected brands. The Division is organised into three business units, which are supported by an in-depth understanding of the latest consumer trends, a high-performing research and development organisation as well as an efficient global operational setup. The Fragrance Division has three business units: Fine Fragrances, Consumer Products and Fragrance Ingredients.

At Givaudan, we have always been proud of our talented employees and of our ability to attract and retain capable and passionate people, all over the world. We understand to recruit and retain the best people we need to offer excellent cultural and professional merits and opportunities – and to construct positive, flexible and competitive career possibilities. Our people need their senses engaged – their professional and personal wishes fulfilled

At Givaudan, Employee Value Proposition is an articulation of the benefits and is offered to all our employees in return for their valued contribution and this is what makes our world such a special place.

For more details please log on to www.givaudan.com



Serving Society through Science



Living, Industry and Farm Essentials.

With the mission of "Serving Society through Science",

Tata Chemicals is focused on driving sustainability in all its offerings around LIFE- Living, Industry, and Farm Essentials, across its global operations spanning four continents.

We harness the fruits of science for goals that go beyond business and uphold a commitment to sustainable development that has a direct bearing on the welfare of the communities we serve and the protection of the environment.



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Tata Chemicals Magadi Tata Chemicals South Africa Tata Chemicals (Soda Ash) Partners



A part of the over US\$ 100 billion Tata Group, Tata Chemicals Limited (TCL) is a global company with interests in businesses that focus on LIFE —Living, Industrial and Farm Essentials. The story of the company is about harnessing the fruits of science for goals that go beyond business.

Through its Living Essentials portfolio the company has positively impacted the lives of millions of Indians. Tata Chemicals is the pioneer and market leader in India's branded Iodised salt segment. With the introduction of an innovative, low-cost, nanotechnology based water purifier; TCL is providing affordable, safe drinking water to the masses. TCL unveiled India's first national brand of pulses in 2010, extending its portfolio from salt to other food essentials.

The company's Industry Essentials product range provides key ingredients to some of the world's largest manufacturers of glass, detergents and other industrial products. Tata Chemicals is currently the world's second largest producer of soda ash with manufacturing facilities in Asia, Europe, Africa and North America. Starting April 1st 2011, these key international subsidiaries have been rebranded under the Tata Chemicals umbrella.

In its efforts to focus on sustainability, about 60% of TCL's soda ash comes from natural resources.

With its Farming Essentials portfolio the company has carved a niche in India as a crop nutrients provider. It is a leading manufacturer of urea and phosphatic fertilizers and, through its subsidiary Rallis, has a strong position in the crop protection and seeds business. TCL is also a pioneer in the customized fertilizer segment and a leading supplier of farm services and specialty products.

The Tata Chemicals Innovation Centre is home to world class R&D capabilities in the emerging areas of nanotechnology and biotechnology. The company's Centre for Agri-Solutions and Technology provides advice on farming solutions and crop nutrition practices.

The company has also entered into a joint venture with Temasek Life Sciences Laboratory Ltd. Singapore (JOiL) to develop jathropa seedlings to enable bio fuels capability.

In line with its **mission, 'serving society through science'**, the company is applying its expertise in sciences, to develop high-tech and sustainable products.



Influencing the World since 1583

The University of Edinburgh is a world-leading public university that is globally recognised for its teaching, research and innovation. Since its foundation more than 400 years ago, its people and their achievements have explored space, revolutionised surgery, published era-defining books, paved the way for life-saving medical breakthroughs and introduced to the world many inventions, discoveries and ideas from penicillin to Dolly the sheep.

The university is consistently ranked one of the top 50 universities and is host to more than 30,000 students from some 130 countries, studying across 100 academic disciplines.

The University attracts the greatest minds from across the globe, and the graduates are some of the most sought after. Graduates of the university include some of the major figures of modern history, including the naturalist Charles Darwin, physicist James Clerk Maxwell, philosopher David Hume, mathematician Thomas Bayes, surgeon Joseph Lister, and a host of famous authors such as Sir Arthur Conan Doyle, Robert Louis Stevenson, and Sir Walter Scott. The University is also associated with 15 Nobel Prize winners, and a host of Olympic gold medallists.

Edinburgh was one of the first UK universities to actively develop commercial links with industry, government and the professions. Edinburgh Research & Innovation assists our students in taking a first step to market, through licensing technology, collaborative research or providing consultancy services.

Edinburgh itself is vibrant and cosmopolitan, and is regularly voted once of the best places in the world to live. Edinburgh enjoys a solid reputation as a centre for innovation, whether as home to the 18th-century Scottish Enlightenment or as a modern source of pioneering science, medicine and technology.

The teaching of Chemistry at Edinburgh began 300 hundred years ago in 1713 when James Crawford was appointed to the Chair of Physick and Chymistry. The School has seeded Chemistry Departments around the globe, such as University of Pennsylvania, University College London, and University of Melbourne.

Amongst our famous alumni are Benjamin Rush, signatory to the US Declaration of Independence and the great Joseph Black who discovered carbon dioxide.



The vibrant green belt at Jamnagar uses treated water from the refinery and township and not the scarce groundwater.

Nothing is wasted at Reliance Industries Limited, not even the waste. Sometimes managing waste is a bigger challenge than managing a plant. Reliance Industries Ltd.'s initiative to treat waste at the source is an example of a challenge well met. For instance, we mix bio-sludge with garden and canteen waste to create soil conditioner and manure for agriculture. Recovering cobalt and manganese from waste to prevent heavy metal pollution is another example. Stuffing for pillows and mattresses from process waste fibre, bio-gas from canteen waste... the list goes on and on. For some, Reliance Industries Limited is India's largest corporate. For the ecology, we are The symbol of life.



Rave Technologies is a software services company, headquartered in Mumbai. Rave is part of Northgate Public Services, a division of Northgate Information Solutions which is a global software and services company with 12,000 staff worldwide and operating in 25 countries across 5 continents. Rave is an ISO 9001:2008 certified and is assessed at CMMi Level 3.

As a one stop service provider for Software product organizations, Rave provides services to fulfill all the requirements ranging from defining or optimizing architecture, product migration, robust development, testing (including automated, manual, performance, regression, and load) and Usability engineering.

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Pandurang Budhkar Marg, Worli,
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