

List of Publications

Publications-Summary	<ul style="list-style-type: none"> • 46 invited book chapters and publications. • Over 350 publications in national and international journals and conference proceedings in a wide selection of journals including Science, Nature Communications, Nature's Scientific Reports, Applied Physics Letters, Energy & Environmental Science, Physical Review B, Physics Review Letters, Physica C, Superconductor Science & Technology, Applied Superconductivity, Journal of Materials Research, Journal of Applied Physics, Science and Journal of Minerals, Metals & Materials, Cryogenics, Ultramicroscopy, Journal of American Ceramic Society, IEEE Transactions in Applied Superconductivity, Japanese Journal of Applied Physics, MRS Bulletin, Scripta Metallurgica, Materials Letters, Journal of Electronic Materials, Chemistry of Materials, Journal of Materials Science & Engineering, Materials Science Forum, Journal of Superconductivity and Nanomaterials. • Over 3000 citations from first author and second author papers alone. Overall he has averaged well over 200 citations / year. Total number of citations over 10, 000. • H-index over 40. • An independent analysis of the field of high-temperature superconductors conducted by Thompson-Reuters's Essential Science Indicators (ESI) and ScienceWatch.com, which tracks global trends and performance in research, ranks Amit Goyal No. 1 worldwide in the total number of citations during the last decade (1999-2009). He also ranks no. 4 worldwide in the total number of papers published in same timeframe (this is still the highest number of papers by anyone outside of Japan). A recent interview with Amit is posted on ScienceWatch (http://sciencewatch.com/ana/st/hts/09maySTHTSGoyal/). The analysis, conducted by ScienceWatch.com ranked authors, institutions, and countries worldwide by no. of citations, no. of papers, and average citations per paper.
List of Publications	<ol style="list-style-type: none"> 1. "Optimal, Nanodefekt Configurations via Strain-Mediated Assembly for Optimized Vortex-Pinning in Superconducting Wires from 4.2K-77K", A Goyal and S. H. Wee, To be submitted to Journal of Physcis, 2016. 2. "Epitaxial Growth of Superconductors on Single-Crystal, Structural, Faceted Fibers (SSIFFS): A New Approach Towards Low-AC Loss Wire", A. Goyal, S. H. Wee and Y. Zuev, To be submitted to Science, 2016. 3. "Single-Crystal-like, epitaxial GaAs thin film on flexible metal substrate for optoelectronic applications," Gokul Radhakrishnan, Kyunghoon Kim, Ravi Droopad and Amit Goyal, To be submitted to Nature Materials, 2016. 4. "Single-Crystal-like, epitaxial Ge Film Growth on cm-sized, biaxially-textured, Fe-based Substrates," Kyunghoon Kim, Gokul Radhakrishnan, Ravi Droopad and Amit Goyal, To be submitted to Nature Magazine's Scientific Reports, 2016. 5. "Single-Crystal-like, epitaxial Germanium Films on Flexible, Single-Crystal-Like Substrates," Kyunghoon Kim, Gokul Radhakrishnan, Ravi Droopad and Amit Goyal, To be submitted to Advanced Functional Materials, 2016. 6. "Heteroepitaxy of large grain Ge film on cube-textured Ni(001) foils through CaF₂ buffer layer," Chen, Liang, Xie, Weiyu, Wang, Gwo-Ching, Bhat, Ishwara, Zhang, Shengbai, Goyal, Amit, Lu, Toh-Ming, Thin Solid Films, Vol: 603, Pages: 428-434, 2015. 7. "Heteroepitaxial Cu₂O on inexpensive, scalable, single-crystal-like metallic substrates: A potential route towards non-toxic, earth-abundant solar cells," S. H. Wee, P. Huang, J. K. Lee and A. Goyal, Nature Magazine's Scientific Reports, Scientific Reports 5, Article number: 16272, doi:10.1038/srep16272 (2015).

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<p>List of Invited Publications / Book Chapters</p>	<ol style="list-style-type: none"> 1. Invited Overview Chapter in second edition of handbook titled "<i>Nanotechnologies to enable high-performance superconductors for energy applications</i>", published by Wiley-VCH, 2013, edited by J. Garcia, Spain. 2. Invited Book Chapter for book titled "<i>Interfaces in Electronic Materials</i>" published by Francis Dodds of Woodhead Publishing, 2011. 3. Invited Overview Chapter in handbook titled "<i>Nanotechnology for the Energy Challenge</i>", published by Wiley-VCH, 2009, edited by J. Garcia, Spain. 4. Invited Overview Chapter in book titled "<i>Thin Film Metal-Oxides: Fundamentals and Applications in Electronics and Energy</i>" published by Springer, 2009, edited by S. Ramanathan, Harvard University. 5. Invited Overview Chapter in book titled "CSD of Functional Oxide Thin Films", Published by Wiley-VCH, 2009, edited by T. Schneller, R. Waser and D. Payne. 6. Invited Paper, titled "Multifunctional, phase-separated, BaTiO₃+CoFe₂O₄ cap buffer layers for improved flux-pinning in YBa₂Cu₃O_{7-δ} based coated conductors," to be published in special issue of Superconductor Science & Technology, 2009. 7. Invited Paper, titled "Enhanced and Uniform in-Field Performance in Long (Gd,Y)-Ba-Cu-O Tapes with Zirconium Doping Fabricated by Metal Organic Chemical Vapor Deposition," to be published in special issue of Superconductor Science & Technology, 2009. 8. Invited Paper, titled "Effects on J_c of Pining Center Morphology for Multiple-in-

Line-Damage in Coated Conductor and Bulk, Melt-Textured HTS,” to be published in special issue of Physica C, 2009.

9. **Invited Paper**, titled “Magnetic field orientation dependence of flux pinning in (Gd,Y)Ba₂Cu₃O_{7-x} coated conductor with tilted lattice and nanostructures,” to be published in special issue of Physica C, 2009.
10. **Invited paper**, titled “Enhanced flux pinning in MOCVD-YBCO films through Zr-additions: Systematic feasibility studies,” to be published in special issue of Physica C, 2009.
11. **Invited Overview Chapter** in Encyclopedia of Materials: Science and Technology (EMSAT) on the RABiTS technology. 2007 Elsevier Ltd. All rights reserved. Editors: K. H. Jürgen Buschow, Robert W. Cahn, Merton C. Flemings, Bernard Ilshner (print), Edward J. Kramer, Subhash Mahajan, and Patrick Veyssière (updates), ISBN: 978-0-08-043152-9, pgs. 1-5.
12. **Invited Overview Chapter** in Book titled “Flux Pinning and AC loss Studies on YBCO Coated Conductors” edited by M. Parans Paranthaman and Venkat Selvamanickam, published by Nova Science Publishers.
13. **Invited paper**, published in the proceedings of the 1st International Congress on Ceramics, held in Toronto, Canada, June, 2006.
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36. **Invited Research Paper**, Symposium on High Temperature Superconductors, 1996 Spring TMS Meeting, and Anaheim, CA.
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41. **Invited Review Article** with D. M. Kroeger, "Models for Long Range Current Flow in Bulk Oxide Superconductors", J. of Minerals, Metals and Materials, Dec. 1994, pg. 14.
42. **Invited Research Paper** with D. M. Kroeger, E. D. Specht, J. E. Tkaczyk, J. Sutliff, J. A. Deluca, G. N. Riley, Jr., L. Masur, "Local Texture and Grain Boundary Misorientations in High-J_c Oxide Superconductors", Published in J. of Superconductivity, Dec. 1994.
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44. **Invited Chapter** in Book titled "Interface and Grain Boundary Chemical Structures in YBaCuO materials", with Z. L. Wang, R. Kontra, D. M. Kroeger and R. K. Williams, 1994.
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	<p>46. Invited Review Article with D. M. Kroeger, “Critical Currents and Microstructure in Oxide Superconductors”, J. of Minerals, Metals and Materials, Oct. 1992.</p>
<p>List of Books Edited</p>	<ul style="list-style-type: none"> • <u>Second Generation High-Temperature Superconducting Wires</u>, edited by A. Goyal, under contract by Kluwer Academic Publishers. (published Oct. 2005) • <u>Epitaxial Growth of Functional Oxides</u>, edited by A. Goyal and W. Wong-Ng, under contract by Kluwer Academic Publishers. (published Spring, 2005) • <u>Processing of Bulk, High-Temperature Superconducting Wires</u>, by A. Goyal, under contract by Plenum Publishing Corporation. (published Spring 2005) • <u>Processing of High Temperature Ceramic Superconductors</u>, edited by R. L. Meng, A. Goyal, W. Wong, M. Matsumoto and H. Freyhardt, published by the American Ceramic Society, 2004. • <u>Processing of High Temperature Ceramic Superconductors</u>, edited by A. Goyal, W. Wong, M. Murakami and J. Driscoll, published by the American Ceramic Society, 2003. • <u>Processing of Long Lengths of Superconductors</u>, edited by U. Balachandran, E. W. Collings and A. Goyal, TMS, Warrendale, PA, 1994.