

RÉSUMÉ

Dr. Kantesh Balani

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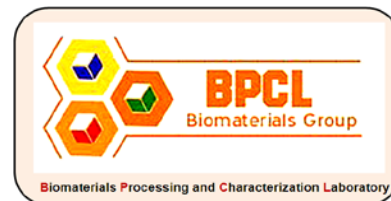
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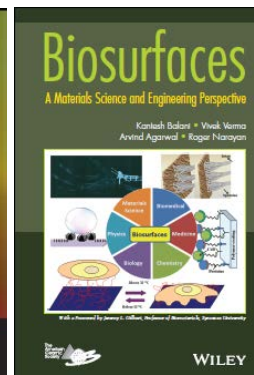
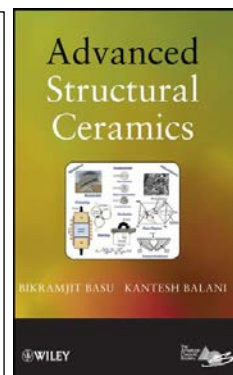
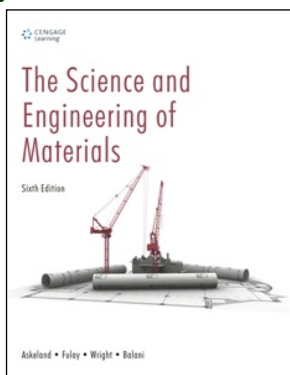
SHORT BIOSKETCH



Dr. Kantesh Balani (ORCID Id: 0000-0003-0619-9164) is currently an Associate Professor in the Department of Materials Science and Engineering at Indian Institute of Technology (IIT) Kanpur. He joined as an Assistant Professor in the Department of Materials and Metallurgical Engineering in July 2008. He earned his doctorate in Mechanical Engineering from Florida International University, Miami, FL, in 2007. His research concentrated on the role of carbon nanotube dispersion in enhancing the fracture toughness of Al_2O_3 nanocomposite. He has also worked on bio-ceramic hydroxyapatite coatings for bio-medical applications. He pursued his post-doctoral research

in the Nanomechanics and Nanotribology Laboratory (NMNTL) and Plasma Forming Laboratory (PFL), Florida International University, Miami, FL. He is recipient of several fellowships and awards such as *Metallurgist of The Year 2016 (Metal Science)* by Ministry of Steels, Govt. of India, *Young Scientist Award 2014* by Centre for Education Growth and Research, *IEI Young Engineer Award (2013-14)* by The Institution of Engineers (India) in *Metallurgical and Materials Engineering discipline*, *2013 P.K. Kelkar Research Fellowship*, *2012 TMS Young Leader Professional Development Award* (received during TMS 2012 Annual Meeting in Mar. 11-15, 2012, Orlando, US) by Materials Processing & Manufacturing Division, *Materials Science and Engineering C Young Researcher Award 2011* by Elsevier, *Young Scientist Platinum Jubilee Award 2010* by National Academy of Sciences, India (NASI), *Young Engineer Award 2010* by Indian National Academy of Engineering, *Young Metallurgist Award 2010* from Ministry of Steels and Mines, Govt. of India, *Young Scientist Award* in Materials Science division by Indian Science Congress Association 2009, *R.L. Thakur Memorial Prize 2009* (Indian Ceramics Association), *David Merchant International Student Achievement Award 2007*, *Arthur E. Focke LeaderShape Award 2004*, *RCTF (Research Challenge Trust Fund) Fellowship 2002*, *Sudharshan Bhat Memorial Prize* and *S. Ananthramakrishnan Memorial Prize 2001*, and *Deutscher Akademischer Austausch Dienst (DAAD) Scholarship 2001*. His ***h-index of 25*** (i-10 index of 50, total citations exceeding 2500, Source: Google Scholar, Feb. 2017, with 300+ citations since last four years 2013-2016) strongly endorses his high research productivity. He is co-author of the book “***Advanced Structural Ceramics***” (Wiley, 2011), and “***Biosurfaces: From the Perspective of Materials Scientist and Engineer***” (Wiley, 2015). Also, he has adapted “***The Science and Engineering of Materials***” (Cengage Learning, 2012).

He has published over 100 articles in the peer-reviewed international journals and over eight conference proceedings, and has delivered over 85 lectures in the international conferences. He has procured a funding of over US\$



1M during his career at IIT Kanpur. His research interests include nanomechanics and nanotribology of bio/nano composites, synthesis and processing of polymeric/ceramic nanocomposites, and energy materials. Currently, he is reviewer of over twenty five technical journals from Elsevier, Blackwell Publishing Inc., Wiley, Springer, Hindawi, Highwire, MRS India/INSA, ACS Publications, Institution of Civil Engineers and American Society of Metals. He serves as a key reader for *Metallurgical and Materials Transactions A*, and is involved in the editorial board of *Defense Science Journal* (DRDO), *Recent Patents on Materials Science* (Bentham), *Recent Patents on Nanotechnology* (Bentham), *Nanomaterials and Energy* (Institution of Civil Engineers), *Journal of Materials & Metallurgical Engineering* (STM Journals), *Journal of NanoScience*, *NanoEngineering & Applications* (STM Journals), and *Journal of Engineering* (Hindawi).

EDUCATION

- 2007, **Ph.D.**, Mechanical and Materials Engineering, *Florida International University* (FIU), Miami, Florida (CGPA 3.975/ 4.0). **Best Ph.D. Student, Deans Award, Dissertation Year Fellowship.**
- 2002, **M.S.**, Materials Science and Engineering, *University of Kentucky*, Lexington, KY (CGPA 3.57/ 4.0). **Research Challenge Trust Fund Fellowship.**
- 2001, **M.Tech.**, Metallurgical and Materials Engineering, *Indian Institute of Technology* (IIT) Madras, India (CGPA: 9.86/ 10.0). **DAAD (Deutscher Akademischer Austausch Dienst) Scholarship** and **Sudharshan Bhat and S. Ananthramakrishnan Memorial Prize.**
- 1999, **B. E.**, Metallurgical Engineering, *PSG College of Technology*, India (83.5 %). **Best Outgoing Student.**

PROFESSIONAL EXPERIENCE

- Jun. 2014 – till date:
Associate Professor, *Indian Institute of Technology Kanpur*, Kanpur, India
- Jul. 2008 – Jun. 2014:
Assistant Professor, *Indian Institute of Technology Kanpur*, Kanpur, India
- July 2007- June 2008:
Post Doctoral Researcher, Plasma Forming Laboratory (PFL) and Nanomechanical and Nanotribology Lab (NMNTL), *Florida International University* (FIU), Miami, USA.
- August 2003-June 2007:
Graduate Research & Teaching Assistant, FIU, Miami, FL, USA.
- August 2001-August 2002:
Graduate Research Assistant, *University of Kentucky*, Lexington, KY, USA.
- May 2000-Feb 2001:
DAAD (Deutscher Akademischer Austausch Dienst) Exchange scholar, *University of Stuttgart*, Germany.
- Jul 1999-May 2000:
Half-Time Teaching Assistant, *Indian Institute of Technology Madras*, Chennai, India.

PATENTS FILED:

1. Aditi Pandey, Swati Midha, Sourabh Ghosh, Vinod Kumar Nigam, Kantesh Balani, “**HA-CeO₂-Ag composite for Bone Tissue Implant**” (Provisional patent filed. Nov. 2016, Application Number: 201611038479).

2. Abdul Rahim Siddiqui, Kantesh Balani, Indian patent under filing, titled, “***Process For Preparation Of Super Hydrophobic Coating***” (Jun. 2016, Application Number: 201611020049).
3. Raja Choudhary, Vandana Singh, Neelima Mahato, Kantesh Balani, Indian patent filed (No. 923/DEL/2014), titled “***Suspension Agitator***”. Granted by Indian Patent Office on **October 02, 2015** in **Journal No. 40/2015**.
4. Md. Faisal, Anshul Gupta, Suboohi Shervani, Anandh Subramaniam, Kantesh Balani, Indian Patent filed (No. 119/DEL/2014), Jan. 15, 2014, titled “***Hydrogen Storage in Magnesium Based Hybrids Using Accumulative Roll Bonding***”.
5. S. Karumanchi, S.V.S. Devarakonda, K.K. Sahoo, B. Deo, I. Shukla, D. Philip, Kantesh Balani, M. Malathi Indian patent (No. 949/CHE/2015), 27/02/2015, titled, “***Control Signal Processing Device for Raising and Lowering of Lance and a Process Thereof***”.

BOOKS/ BOOK CHAPTER:

1. Kantesh Balani, Vivek Verma, Arvind Agarwal, Roger Narayan, Ed., “*Biosurfaces: From the Perspective of Materials Scientist and Engineer*”, **John Wiley and Sons Inc.**, Jan. 2015, ISBN: 978111829997-5 ([Book](#)).
2. Bikramjit Basu and Kantesh Balani, “*Advanced Structural Ceramics*”, **John Wiley and Sons Inc.**, Aug. 2011, ISBN 9780470497111. ([Book](#)).
3. Kantesh Balani, “*The Science and Engineering of Materials*”, by Donald R. Askeland, Pradeep P. Fulay, and Wendelin Wright **Cengage Learning**, Jan. 2012, ISBN-13: 9788131516416. ([Book Adaptation](#)). ~ **over 2200 copies sold**.
4. Ashutosh K. Dubey, Kantesh Balani and Bikramjit Basu, “*Electrically active biocomposites as smart scaffold for bone tissue engineering*” in book **Nanomedicine: Technologies and Applications. Woodhead Publishing Ltd**, October 2012, Pages 537-570 ([Book Chapter](#)).
5. Kantesh Balani, Anandh Subramaniam, and Arvind Agarwal, “*Introduction to Nanotechnology*”, **Cengage Learning**, Dec. 2016. (Book under preparation).

NATIONAL SERVICES:

1. Expert panel member of designing Arjun Armory Recover and Repair Vehicle (ARRV), DRDO, GoI Aug. 2014-Feb. 2015.
2. Virtual Lab initiative of MHRD, GoI, (Coordinator at IIT Kanpur), 2014-17.
3. Have developed two courses (as co-instructor) on **NPTEL** (National Programme on Technology Enhanced Learning) portal:
 - a. ***Introduction to Biomaterials*** (with Prof. Bikramjit Basu, IISc, Bangalore): **Over 23,000 views online** (till Nov. 2016)
 - b. ***Nanostructures and Nanomaterials: Characterization and Properties*** (with Prof. Anandh Subramaniam, IIT Kanpur): **Over 92,000 views online** (till Nov. 2016)

THEME-WISE RESEARCH PUBLICATIONS (PEER-REVIEWED JOURNALS):

Biomaterials:

1. F. Alam, Kantesh Balani, “*Adhesion Force of Staphylococcus aureus on Various Biomaterial Surfaces*”, **Journal of the Mechanical Behavior of Biomedical Materials**, Vol. 65 (2017) pp. 872-880.
2. P. Trivedi, K.C. Nune, R.D.K. Misra, A.K. Patel, Kantesh Balani, R. Jayaganthan, “*Cellular response of Escherichia coli to Mg-2Zn-2Gd alloy with different grain structure: mechanism*

- of disruption of colonization”. **Materials Technology: Advanced Performance Materials**, Vol. 31 (13) (2016), pp. 836-844.
3. P. Trivedi, K.C. Nune, R.D.K. Misra, A.K. Patel, Kantesh Balani, R. Jayanthan, “Cellular Response of Escherichia Coli to Mg-2Zn-2Gd Alloy with Different Grain Structure: Mechanism of Disruption of Colonization”, (2016) **Accepted** in **Materials Technology: Advanced Performance Materials**, Sept. 2016, DOI: 10.1080/10667857.2016.1239798.
 4. A.K. Patel, P. Trivedi, Kantesh Balani, “Carbon Nanotube Functionalization Decreases Osteogenic Differentiation in Aluminum Oxide Reinforced Ultrahigh Molecular Weight Polyethylene”. **ACS Biomaterials Science & Engineering** Vol. 2 (8), (2016), 1242-1256.
 5. R.K. Sharma, M. Agarwal, Kantesh Balani, “Effect of ZnO Morphology on Affecting Bactericidal Property of Ultra High Molecular Weight Polyethylene Biocomposite”. **Materials Science and Engineering C**, Vol. 62 (2016), pp 843-851.
 6. F. Carneiro, B.P.T. Kruithof, Kantesh Balani, A. Agarwal, V. Gaussin, L. Kos, “Relationships Between Melanocytes, Mechanical Properties and Extracellular Matrix Composition in Mouse Heart Valves”. **Journal of Long-Term Effects of Medical Implants**, Vol. 25 (1-2) (2015), pp. 17-26.
 7. F. Alam, A. Kumar, A.K. Patel, R.K. Sharma, Kantesh Balani, “Processing, Characterization and Fretting Wear of Zinc Oxide and Silver Nanoparticles Reinforced Ultra High Molecular Weight Polyethylene Biopolymer Nanocomposite”. **Journal of Minerals, Metals, and Materials (JOM)**, Vol. 67 (4) (2015) pp 688-701.
 8. P. Trivedi, A.K. Patel, R. Maurya, R. Jayaganthan, Kantesh Balani, “Nanomechanical Characterization and Protein Adsorption of Cold Rolled Zirconium Alloy”. **Journal of Minerals, Metals, and Materials (JOM)**, Vol. 67 (4) (2015), pp 726-732.
 9. D. Kumar, S.N. Akhtar, A.K. Patel, J. Ramkumar, Kantesh Balani, “Tribological Performance of Laser Peened Ti-6Al-4V”, **Wear**, Vol. 322-323 (2015), pp 203–217.
 10. A. K. Patel, Kantesh Balani, “Dispersion Fraction Enhances Cellular Growth of Carbon Nanotube and Aluminum Oxide Reinforced Ultrahigh Molecular Weight Polyethylene Biocomposites”. **Materials Science and Engineering C**, Vol. 46 (1) (2015), pp 504–513.
 11. A.K. Patel, P. Trivedi, Kantesh Balani, “Processing and mechanical characterization of compression-molded ultrahigh molecular weight polyethylene biocomposite reinforced with aluminum oxide”, **Journal of NanoScience, NanoEngineering and Applications**, Vol. 4 (3) (2014), pp 1-11.
 12. S. Bajpai, A. Gupta, S.K. Pradhan, T. Mandal, Kantesh Balani, “Crack Propagation Resistance of Pulsed Laser Deposited Alumina-Hydroxyapatite Coating”. **Journal of Minerals, Metals, and Materials (JOM)**, Vol. 66 (10) (2014), pp 2095-2107.
 13. R.K. Sharma, Kantesh Balani, “Mechanics of ZnO Micro-rod and ZnO Nanoparticle Reinforcement in Ultra High Molecular Weight Polyethylene Biocomposite”. **Journal of Physics D: Applied Physics**, Vol. 47 (34) (2014) 345301 11pp.
 14. K. Herkendell, V.R. Shukla, A.K. Patel, Kantesh Balani, “Domination of Volumetric Toughening by Silver Nanoparticles over Interfacial strengthening of Carbon Nanotubes in Bactericidal Hydroxyapatite Biocomposite”. **Materials Science and Engineering C**, Vol. 34 (1) (2014) pp. 455-467.
 15. I. Bajpai, Kantesh Balani, B. Basu, “Synergistic Effect of Static Magnetic Field and HA-Fe₃O₄ Magnetic Composites on Viability of S.aureus and E.coli Bacteria”, **J. Biomed. Mater. Res. B – Appl. Biomater.** 102 (3) (2014), pp. 524-532
 16. A.K. Dubey, A. Ea, Kantesh Balani, and B. Basu, “Multifunctional properties and in vitro cytocompatibility of multi-stage spark plasma sintered HA-BaTiO₃ based piezobiocomposites for bone replacement applications”. **J. Am. Ceram. Soc.**, Vol. 96 (12) (2013) 3753-3759.

17. I. Bajpai, Kantesh Balani, B. Basu, “Spark Plasma Sintered HA-Fe₃O₄ Based Multifunctional Magnetic Biocomposites”. *J. Am. Ceram. Soc.*, Vol. 96 (7) (2013) pp 2100-2108.
18. Md A.F. Afzal, S. Kalmodia, P. Kesarwani, B. Basu, Kantesh Balani, “Bactericidal effect of silver reinforced carbon-nanotube and hydroxyapatite composites”. *Journal of Biomaterials Applications*, Vol. 27 (8) (2013) pp 967-978.
19. A. Gupta, G. Tripathi, D. Lahiri, and Kantesh Balani, “Development of UHMWPE-HA-Al₂O₃-CNT Hybrid Composites for Hard Tissue Replacement”. *Materials Science and Technology*, Vol. 29 (6) (2013), pp 514-522.
20. P. Jain, T. Mandal, P. Prakash, A. Garg, Kantesh Balani, “Electrophoretic Deposition of Nanocrystalline Hydroxyapatite on Ti6Al4V/TiO₂ Substrate”. *Journal of Coatings Technology and Research*, Vol. 10 (2) (2013), pp 263-275.
21. Md. A.F. Afzal, P. Kesarwani, K.M. Reddy, S. Kalmodia, B. Basu, Kantesh Balani, “Functionally Graded Hydroxyapatite-Alumina-Zirconia Biocomposite: Synergy of Toughness and Biocompatibility”. *Mater. Sci. Engg. C*, Vol. 32 (2012), pp. 1164-1173.
22. A. Gupta, G. Tripathi, B. Basu, Kantesh Balani, “Dependence of Protein Adsorption on Wetting Behavior of UHMWPE-HA-Al₂O₃-CNT Hybrid Biocomposites”. *Journal of Minerals, Metals, and Materials (JOM)*, Vol. 64 (4) (2012) pp 506- 513.
23. A. K. Dubey, B. Basu, Kantesh Balani, R. Guo & A. S. Bhalla, “Multifunctionality of Perovskites BaTiO₃ and CaTiO₃ in a Composite with Hydroxyapatite as Orthopedic Implant Materials”. *Integrated Ferroelectrics* Vol. 131 (1) (2011) pp 119-126.
24. A. K. Dubey, B. Basu, Kantesh Balani, R. Guo & A. S. Bhalla, “Dielectric and Pyroelectric Properties of HAp-BaTiO₃ Composites”, *Ferroelectrics*, Vol. 423 (1) (2011) pp 63-76.
25. Kantesh Balani, R.R. Patel, A.K. Keshri, D. Lahiri, and A. Agarwal, “Multi-scale Hierarchy of Turtle Shell’s Microstructure and its Mechanical Properties”. *J. Mech. Behav. Biomed. Mater.*, Vol. 4 (2011) 1440-1451.
26. S. Kalmodia, S. Goenka, T. Laha, D. Lahiri, B. Basu, Kantesh Balani, “Microstructure, mechanical properties, and in vitro biocompatibility of spark plasma sintered hydroxyapatite-aluminum oxide-carbon nanotube composite”. *Materials Science and Engineering C*, Vol. 30, (2010) 1162-1169. **Cited over 35 times.**
27. Kantesh Balani, R. G. Batista, D. Lahiri, A. Agarwal, “Hydrophobicity of Lotus Leaf: A Nanomechanical and Computational Approach”. *Nanotechnology*, Vol. 20 (2009), 305707 (9 pp).
28. Kantesh Balani, F.C. Brito, L. Kos, A. Agarwal, “Melanocyte pigmentation stiffens murine cardiac tricuspid valve leaflet”. *J Royal Society Interface*, Vol. 6 (2009) 1097-1102.
29. Kantesh Balani, D. Lahiri, A.K. Keshri, S.R. Bakshi, J.E. Tercero, A. Agarwal, “The Nano-scratch Behavior of Biocompatible Hydroxyapatite Reinforced with Aluminum Oxide and Carbon Nanotubes”. *J. Metals, Minerals and Materials (JOM)*, Vol. 61 (9), Sept. 2009, 63-66.
30. J. Tercero, S. Namin, D. Lahiri, Kantesh Balani, N. Tsoukias and A. Agarwal, “Effect of Carbon Nanotube and Aluminum Oxide Addition on Plasma Sprayed Hydroxyapatite Coating’s Mechanical Properties and Biocompatibility”. *Materials Science and Engineering C*, Vol. 29, (2009), 2195–2202. **Cited over 45 times.**
31. Kantesh Balani, Y.Chen, S.P. Harimkar, N.B. Dahotre, and A. Agarwal, “Tribological Behavior of Plasma Sprayed Carbon Nanotube Reinforced Hydroxyapatite-Coating in Physiological Solution”. *Acta Biomaterialia*, Vol. 3, Issue 6, (2007), 944-951. **Cited over 100 times.**

32. S.R. Bakshi, Kantesh Balani, T. Laha, J. Tercero, and A. Agarwal, “Nano-mechanical and Nano-scratch Characterization of UHMWPE and UHMWPE- 5 wt.% MWNT coatings on a steel substrate.” *Journal of Minerals, Metals, and Materials (JOM)*, July 2007, pp. 50-53.
33. Kantesh Balani, R. Anderson, T. Laha, M. Andara, J. Tercero, E. Crumpler and A. Agarwal, “Plasma-Sprayed Carbon-Nanotube Reinforced Hydroxyapatite Coatings and Their Interaction with Human Osteoblasts In Vitro”, *Biomaterials*, Vol. 28, No. 4, (2007) pp 618-624. **Cited over 310 times.**

High and Ultra-High Temperature Ceramics:

34. A. Nisar, and Kantesh Balani, “Role of Interfaces on Microstructural, Mechanical and Multi-length Scale Wear Mechanics of TaC-based Ultra-High Temperature Ceramic Composites”. *Advanced Engineering Materials*, Dec. 2016. DOI: 10.1002/adem.201600713.
35. A. Nisar, S. Ariharan, N. Sreenivas, T. Venkateswaran, and Kantesh Balani, “Effect of Carbon Nanotube on Microstructural and Ablation Behavior of ZrB₂-20SiC Based Ultra-High Temperature Ceramic Composites Under Plasma-Arc Jet Exposure”, *Carbon*, Vol. 111 (2017), pp. 269-282.
36. S. Ariharan, P. Sengupta, A. Nisar, A. Agnihotri, N. Balaji, S.T. Aruna, Kantesh Balani, “Dual-Layer Oxidation-Protective Plasma Sprayed Coating of SiC-ZrB₂/Al₂O₃ on Graphite”. *Journal of Thermal Spray Technology*, Dec. 2016, DOI 10.1007/s11666-016-0508-3.
37. A. Nisar, S. Ariharan, T. Venkateshwaran, N. Sreenivas, Kantesh Balani, “Oxidation Studies on TaC Based Ultra-High Temperature Ceramic Composites Under Plasma Arc Jet Exposure”, *Corrosion Science*, Vol. 109, (2016), pp. 50-61.
38. A. Nisar, Ariharan S, Kantesh Balani, “Synergistic Reinforcement of Carbon Nanotubes and Silicon Carbide for Toughening Tantalum Carbide Based Ultra-High Temperature Ceramic”. *Journal of Materials Research* Vol. 31 (6), (2016), pp. 682-692.
39. A. Nisar, S. Ariharan, Kantesh Balani, “ZrB₂ -Based Ultra High Temperature Ceramics: Application Under Extreme Environment”, *Directions*, Vol. 15 No.1 (2015), pp 11.
40. Kantesh Balani, S. R. Bakshi, T. Mungole, A. Agarwal “Ab-initio Molecular Modeling of Interfaces in Tantalum-Carbon System”. *J. Appl. Physics*, Vol. 111, (2012) 063521 (7 pp).
41. Y. Chen, Kantesh Balani, A. Agarwal, “Do thermal residual stresses contribute to the improved fracture toughness of carbon nanotube/alumina nanocomposites?” *Scripta Materialia* Vol. 66 (2012) pp 347-350.
42. Kantesh Balani, S. Bakshi, D. Lahiri, A. Agarwal, “Grain Growth Behavior of Aluminum Oxide Reinforced with Carbon Nanotube During Plasma Spraying and Post-Spray Consolidation”. *International Journal of Applied Ceramic Technology*, Vol. 7 (6), (2010) 846-855.
43. A. Rishabh, M.R. Joshi, Kantesh Balani, “Fractal Model for Estimating Fracture Toughness of Carbon Nanotube Reinforced Aluminum Oxide”. *Journal of Applied Physics*, Vol. 107 (12), (2010), 123532 (7 pp).
44. A. Gupta, S. Sharma, M.R. Joshi, P. Agarwal, Kantesh Balani, “Grain Growth Behavior of Al₂O₃ Nanomaterials: A Review”. *Materials Science Forum*, Vol. 653, (2010) 87-130.
45. T. Zhang, L. Kumari, G. H. Du, W.Z. Li, Q.W. Wang, Kantesh Balani, A. Agarwal, “Mechanical Properties of Carbon Nanotube-Alumina Nanocomposites Synthesized by Chemical Vapor Deposition and Spark Plasma Sintering”, *Composites: Part A* Vol. 40, No. 1, (2009), 86-93.

46. Y. Chen, A. Samant, Kantesh Balani, N.B. Dahotre, and A. Agarwal, “Effect of laser melting on plasma-sprayed aluminum oxide coatings reinforced with carbon nanotubes”. **Appl. Phy. A**. Vol. 94, (2009), 861-870.
47. Y. Chen, T. Laha, Kantesh Balani and A. Agarwal, “Nanomechanical Properties of Hafnium Nitride Coating”. **Scripta Materialia** (2008), Vol. 58 (12) 1121.
48. Kantesh Balani and A. Agarwal, “Damping Behavior Of Carbon Nanotube Reinforced Aluminum Oxide Coatings By Nanomechanical Dynamic Modulus Mapping”. **J. Applied Physics**, Vol. 104, (2008) 063517.
49. Kantesh Balani, S.P. Harimkar, A. Keshri, Y. Chen, N.B. Dahotre, A. Agarwal, “Multiscale Wear of Plasma Sprayed Carbon Nanotube Reinforced Aluminum Oxide Nanocomposite Coating”. **Acta Mater.**, Vol. 56, No. 20, (2008), 5984-5994. **Cited over 50 times.**
50. S. R. Bakshi, V. Singh, Kantesh Balani, D. G. Mc- Cartney, S. Seal, A. Agarwal, “Carbon Nanotube Reinforced Aluminum Composite Coating via Cold Spraying”. **Surface & Coatings Technology** Vol. 202, No. 21, (2008), 5162-5169. **Cited over 100 times.**
51. Kantesh Balani, and A. Agarwal, “Processing Map for Plasma Sprayed Aluminum Oxide-Carbon Nanotube Nanocomposite Coatings”. **Surface & Coatings Technology** Vol. 202, No. 17, (2008), 4270-4277. (Appeared as special editor’s selection in **Metal Finishing**, Oct. 2008, pp 45-51).
52. Kantesh Balani, and A. Agarwal, “Wetting of Carbon Nanotube by Aluminum Oxide”. **Nanotechnology** Vol. 16, (2008) 165701.
53. Y. Chen, Kantesh Balani, and A. Agarwal, “Analytical Model to Evaluate Interface Characteristics of Carbon Nanotube Reinforced Aluminum Oxide Nanocomposites”. **Applied Physics Letters**, Vol. 92, No. 1, (2008), 011916.
54. Kantesh Balani, T. Zhang, A. Karakoti, W. Li, S. Seal, and A. Agarwal, “In situ carbon nanotube reinforcements in a plasma-sprayed aluminum oxide nanocomposite coating”. **Acta Materialia**, Vol. 56, No. 3, (2008), 571. **Cited over 75 times.**
55. S. R. Bakshi, Kantesh Balani, and A. Agarwal, “Thermal Conductivity of Plasma Sprayed Aluminum Oxide-Multiwalled Carbon Nanotube Composites”. **Journal of the American Ceramics Society** Vol. 91, No. 3, (2008), 942-947.
56. Yao Chen, Kantesh Balani, and Arvind Agarwal, “Modified Eshelby Tensor Modeling For Elastic Property Prediction Of Carbon Nanotube Reinforced Ceramic Nanocomposites”. **Applied Physics Letters**, Vol. 91, No. 3, (2007), 031903.
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58. Kantesh Balani, Gabriela Gonzalez, Arvind Agarwal, Robert Hickman, J. Scott O’Dell, and Sudipta Seal, "Synthesis, Microstructural Characterization and Mechanical Property Evaluation of Vacuum Plasma Sprayed Tantalum Carbide", **Journal of American Ceramic Society**, Vol. 89 (4), (2006), pp 1419-1425. **Cited over 40 times.**
59. Kantesh Balani, A. Agarwal, and T. McKechnie, “Near Net Shape Fabrication via Vacuum Plasma Spray Forming”, **Trans Indian Inst. Met.**, Vol. 59, No.2 April (2006), pp 237-244.
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Coatings and Surface Engineering:

61. A.R. Siddiqui, R. Maurya, Kantesh Balani, “Superhydrophobic Carbon Nanofiber Coating on Activated Carbon Fabric and Glass Substrates”. **Journal of Materials Chemistry A**, Vol. 5 (2017) pp 2936-2946.
62. S. Awasthi, R. Maurya, C.P. Pandey and Kantesh Balani, “Interfacial Mechanics of Carbonaceous Reinforcements in Electrophoretically Deposited Nickel Coatings”. **Surface and Coatings Technology**, Vol. 310 (2017), pp 79-86.
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RESEARCH ARTICLES (Under review)

1. F. Alam, Kantesh Balani, “Role of silver/zinc oxide in affecting de-adhesion strength of *Staphylococcus aureus* on polymer biocomposites”. **Revised manuscript submitted to Materials Science and Engineering C**, Dec. 2016.
2. R. K. Sharma, A. Nisar, Kantesh Balani, “Mechanics of ZnO Morphological Dependence on Wear Resistance of Ultra High Molecular Weight Polyethylene”. **Submitted revised manuscript to European Journal of Mechanics- A/Solids**, Jan. 2017.

3. R. Maurya, A.R. Siddiqui, Kantesh Balani, “*Protective Phosphate Chemical Conversion Coating on Novel Mg-9Li-7Al-1Sn and Mg-9Li-5Al-3Sn-1Zn Alloys*”. [Submitted to Corrosion Science](#), Sept. 2016.
4. A. Banerjee, N. Mahato, B. Bhaduri, N. Balaji, A. R. Siddiqui, S.T. Aruna, N. Verma, Kantesh Balani, “*Catalytic Effects of CeO₂ and Carbon Nanotubes on Phase Evolution of Plasma Sprayed Al₂O₃*”. [Submitted revised version to Nanomaterials & Energy](#), Jan. 2017.
5. R. Maurya, A.R. Siddiqui, Kantesh Balani, “*In vitro Degradation and Biomineralization Ability of Hydroxyapatite Coated Mg-9Li-7Al-1Sn and Mg-9Li-5Al-3Sn-1Zn Alloys*”. [Submitted to Materials Science and Engineering C](#), Jan. 2017.
6. S. Ariharan, A. Nisar, N. Balaji, S.T. Aruna, Kantesh Balani, “*Carbon Nanotubes Stabilize High Temperature Zirconia Phase And Toughen Al₂O₃-based Thermal Barrier Coatings*”. [Submitted to Composites Part B](#), Jan. 2017.
7. A. Pandey, S. Midha; R.K. Sharma; R. Maurya; V. K. Nigam; S. Ghosh, Kantesh Balani, “*Exaggerated Cell-Growth Via Neutralizing Oxidative Species in Antioxidant Ceria And Antibacterial Silver Reinforced Hydroxyapatite-Based Biocomposite*”. [Submitted to Biomaterials](#), Jan. 2017.
8. S. Awasthi, S.K. Pandey, A. Juyal, C.P. Pandey, Kantesh Balani, “*Enhanced Magnetic Coercivity and Damage Tolerance in Electrophoretically Deposited Nickel-Diamond Coating: Comparison with Carbon Nanotubes and Graphene Reinforcement*”. [Submitted to Applied Materials & Interfaces](#), Feb. 2017.
9. A. Nisar, S. Ariharan, Kantesh Balani, “*Establishing Microstructure-Mechanical Property Correlation in ZrB₂-based Ultra-High Temperature Ceramic Composites*”, [Submitted to Materials and Design](#), Feb. 2017.

INTERNATIONAL/NATIONAL TECHNICAL TALKS

1. Ambreen Nisar, S. Ariharan, T. Venkateshwaran, N. Sreenivas, Kantesh Balani, “*Ultra-High Temperature Ceramic Composites for Hypersonic Applications*”, Advances in Smart & Functional Materials 2017 (ASFM 2017), Jan. 13-14, 2017, AMPRI (Advanced Materials and Processes Research Institute), Bhopal (**Plenary Lecture**).
2. Rita Maurya, Abdul Rahim Siddiqui and Kantesh Balani, “*An Environmental Friendly Phosphate Chemical Conversion Coating on Novel Mg-9Li-7Al-1Sn and Mg-9Li-5Al-3Sn-1Zn Alloys for Corrosion Protection*”, 70th Annual Technical Meeting (70th ATM), of Indian Institute of Metals, Nov. 11-14, 2016, IIT Kanpur.
3. Aditi Pandey, Rajeev Kumar Sharma, Rita Maurya, Vinod Kumar Nigam and Kantesh Balani “*Development of Hydroxyapatite based Antioxidant Composites for Orthopedic Applications*”, 70th Annual Technical Meeting (70th ATM), of Indian Institute of Metals, Nov. 11-14, 2016, IIT Kanpur.
4. Siddiqui Abdul Rahim, Rita Maurya and Kantesh Balani, “*Process for Synthesizing a Stable Superhydrophobic Carbon Nanofiber Coating on Various Substrates*”.
5. Ambreen Nisar and Kantesh Balani, “*Role of Interfaces on Microstructural, Mechanical and Multi-length Scale Wear Mechanics of TaC-based Ultra-High Temperature Ceramic Composites*”, 70th Annual Technical Meeting (70th ATM), of Indian Institute of Metals, Nov. 11-14, 2016, IIT Kanpur (**Invited**).
6. Fahad Alam, Anil Kumar and Kantesh Balani, “*Role of Ag and ZnO reinforcement on Tribological properties and bacterial adhesion on ultra-high molecular weight polyethylene*”, 70th Annual Technical Meeting (70th ATM), of Indian Institute of Metals, Nov. 11-14, 2016, IIT Kanpur.

7. A. Nisar and Kantesh Balani, "***Effect of CNT addition on Corrosion Resistance of ZrB₂-20SiC Based Ultra-High Temperature Ceramic Composites under Plasma-Arc Jet Exposure***", (International Conference on Advances in Materials and Materials Processing) ICAMMP, Nov. 4-6, 2016, IIT Kharagpur (**Invited**).
8. Kantesh Balani, "***Exploring Length Scales in Biomechanics***", session remarks during Indo-German Frontiers of Engineering, May 19-22, Potsdam, Germany.
9. R.K. Sharma, Kantesh Balani, "***Effect of ZnO Morphology on the Mechanical, Tribological and Biological Properties of Ultra High Molecular Weight Polyethylene Biocomposites***", 2nd International Conference on Advancements and Recent Innovations in Mechanical, Production and Industrial Engineering (ARIMPIE-2016), Apr. 15-16, 2016, NOIDA, India. (**Keynote address**).
10. Kantesh Balani, "***Paradigm of Functional Materials From Biological to Aerospace Applications***", Role of Metals in the Development of Non-Metallic Materials and Products. DMSRDE, Kanpur, Feb. 24, 2016 (**Invited**).
11. Kantesh Balani, "***Hydrophobicity: Analogy to Lotus Leaf***", Application of Nanotechnology in Textiles, Uttar Pradesh Textile Technology Institute, January 18-23, 2016, Kanpur, India (**Invited**).
12. A. Nisar, Kantesh Balani, "***High Temperature Oxidation of Spark Plasma Sintered TaC and ZrB₂ based Ultra-High Temperature Ceramic Composites***", Ultra High Temperature Ceramics for Thermostructural Applications, Materials Research Center, Indian Institute of Science Bangalore, Dec. 14, 2015, Bengaluru, India.
13. A. Nisar, S. Ariharan, Kantesh Balani, "***Role of SiC and Carbon nanotube Reinforcement on Fracture Properties of TaC***", 3rd International Conference on Nanostructured Materials and Nanocomposites (ICNM-2015), Dec. 12-14, 2015, Mathura, India (**Invited**).
14. Kantesh Balani, "***Cytocompatibility of Hydroxyapatite-Based Biocomposites***", International conference on Frontiers in Materials Processing, Applications, Research & Technology (FiMPART) 2015, Jun. 12-15, 2015, Hyderabad, India (**Invited**).
15. I. Bajpai, Kantesh Balani, B. Basu, "***Synergy of Static Magnetic Field Stimulation and Magnetisation towards Bactericidal Property of Multifunctional HA-Fe₃O₄ Biocomposites***", 2015 MRS Spring Meeting, April 6-10, 2015, San Francisco, California, USA.
16. Kantesh Balani, "***Multifunctional Hydroxyapatite-Based Biocomposites***", National Conference on Innovations in Materials, Design and Manufacturing (IMDM-2015), March 27-28, 2015, HBTI, Kanpur, India (**Invited**).
17. Kantesh Balani, "***Processing and Cytocompatibility of Functionally Graded Hydroxyapatite Biocomposites***", 1st International Conference on Alumina and Other Functional Ceramics (AOFC-2015), Mar. 11-13, 2015, Kolkata, India (**Invited**).
18. S. Ariharan, N. Balaji, S.T. Aruna and Kantesh Balani, "***Phase Retention of YSZ in Plasma Sprayed YSZ-CNT Reinforced Al₂O₃ Matrix Composites for Thermal Barrier Coating***" 6th Asian Thermal Spray Conference, November 24-26, 2014, Hyderabad, India.
19. S. Ariharan, Pradyut Sengupta, Ankur Agnihotri, N. Balaji, S.T. Aruna, Kantesh Balani, "***Oxidation and Protection of Graphite***", 6th Asian Thermal Spray Conference, November 24-26, 2014, Hyderabad, India.
20. P. K. Mallik, B. Basu, Kantesh Balani, "***Novel Multistage Spark Plasma Sintered HA-CaTiO₃ Composites for Biomedical Application***" NMD ATM 2014, 52nd National Metallurgist Day and 68th Annual Technical Meeting, Nov. 12-15, 2014, Pune, India.
21. A. Nisar and Kantesh Balani, "***High Temperature Oxidation Studies of TaC-based Ultra-High Temperature Ceramic Composites***" NMD ATM 2014, 52nd National Metallurgist Day and 68th Annual Technical Meeting, Nov. 12-15, 2014, Pune, India.
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 24. R. K. Sharma, Kantesh Balani, “**Morphological Dependence of Interfacial Strength in ZnO Reinforced Ultra High Molecular Weight Polyethylene Biocomposite**” MS&T (Materials Science and Technology) 2014, Oct. 12-16, 2014, Pittsburgh, USA (**Invited**).
 25. A.K. Patel, Kantesh Balani, “**Tribological Performance of Carbon Nanotube and Aluminum Oxide Reinforced Ultra High Molecular Weight Polyethylene Biocomposite**” MS&T (Materials Science and Technology) 2014, Oct. 12-16, 2014, Pittsburgh, USA.
 26. F. Alam, Kantesh Balani, “**Fretting wear of zinc oxide and silver nanoparticles reinforced ultra high molecular weight polyethylene biopolymer composites**” MS&T (Materials Science and Technology) 2014, Oct. 12-16, 2014, Pittsburgh, USA.
 27. Vishnu Shukla, Katharina Herkendell; Anup Patel; Kantesh Balani; “**Mathematical Model to Predict The First Mode Fracture Toughness of Hydroxyapatite-Carbon Nanotube-Silver Nanocomposite**” MS&T (Materials Science and Technology) 2014, Oct. 12-16, 2014, Pittsburgh, USA.
 28. Kantesh Balani, “**Processing and Cytocompatibility of Hydroxyapatite Biocomposites**”, Indo US Collaboration for Engineering Education, Jul 11, 2014 (Online webinar).
 29. Md. Faisal, A.Gupta, S. Shervani, Kantesh Balani, A. Subramaniam, “**Enhanced Hydrogen Storage Properties In Mg-Base Hybrids Synthesized By Accumulative Roll Bonding**”, 20th World Hydrogen Energy Conference-2014 (WHEC-14), Gwangju, South Korea, June. 15-20, 2014.
 30. P. Kumar, N. Mahato, V. Singh, R. Choudhary, Kantesh Balani, “**Pulsed Electrodeposition of Nano-Crystalline Ni with Uniform Co-Deposition of Micron Sized Diamond Particles on Annealed Copper Substrate**” BTDD (Behind the Teachers Desk) Seminar, on 27-28 March 2014, National Metallurgy Laboratory Jamshedpur, India.
 31. A. Gupta, Md. Faisal, S. Shervani, Kantesh Balani, A. Subramaniam, “**Effect Of Carbon Addition On Hydrogen Storage Properties Of Mg-Lani₅ Hybrids**”, International Conference On Emerging Materials And Processes (ICEMP) – 2014, Feb. 26-28, 2014, CSIR-IMMT, Bhubaneswar, Odisha, India.
 32. S. Shervani, Md. Faisal, A. Gupta, Kantesh Balani, A. Subramaniam, “**Hydrogen Storage in Mg-Mg₂Ni Hybrids via Accumulative Roll Bonding**”, International Conference On Emerging Materials And Processes (ICEMP) – 2014, Feb. 26-28, 2014, CSIR-IMMT, Bhubaneswar, Odisha, India.
 33. R. K. Sharma and Kantesh Balani, “**Tribological Properties of Antibacterial ZnO- UHMWPE Biocomposites**”. International Conference On Emerging Materials And Processes (ICEMP) – 2014, Feb. 26-28, 2014, CSIR-IMMT, Bhubaneswar, Odisha, India.
 34. R. K. Sharma and Kantesh Balani, “**Cytocompatibility and Bactericidal Property of ZnO-UHMWPE Biocomposites**”. International Conference on Polymer Materials Science and Engineering 2013, Nov. 14-15, 2013, Venice, Italy.
 35. A.K. Patel, Kantesh Balani, “**Correlation of Wettability with Surface Energies and Tribology of Functionalized Multi-walled Carbon Nanotube (f-CNT) and Al₂O₃ Reinforced Ultra High Molecular Weight Polyethylene Bionanobiocomposites**”. Indian Institute of Metals, Annual Technical Meeting, Nov. 12-13, 2013, IIT BHU, Varanasi, India.
 36. J. Nair, V. Singh, Kantesh Balani, “**Microstructure Analysis using Object Oriented Finite Element Methods and Study of Stress Patterns**”. Indian Institute of Metals, Annual Technical Meeting, Nov. 12-13, 2013, IIT BHU, Varanasi, India.

37. V. Kumar, R. Shekhar, Kantesh Balani, “**Corrosion behavior study of novel Mg-Li-Al based alloys in dilute chloride solution**”. Indian Institute of Metals, Annual Technical Meeting, Nov. 12-13, 2013, IIT BHU, Varanasi, India.
38. P. Kumar, V. Singh, N. Mahato, R. Choudhary, Kantesh Balani, “**Pulsed Electrodeposition of Nanocrystalline Ni with Uniform Co deposition of Micron Sized Diamond Particles on Annealed Copper Substrate**”. Indian Institute of Metals, Annual Technical Meeting, Nov. 12-13, 2013, IIT BHU, Varanasi, India.
39. A.K. Patel, Kantesh Balani, “**Silane Functionalized Multiwalled Carbon Nanotubes and its Reinforcing Effects on UHMWPE /Al₂O₃ Biocomposites**”, 2nd International Conference on Biomaterials Science in Tsukuba, Japan (ICBS2013), Japan- Tsukuba, Mar. 19-22, 2013.
40. Kantesh Balani, “**Role of Alumina Addition on the Mechanics, Tribology and Cytocompatibility of Hydroxyapatite Biocomposites**”, Aluminas-2013, Kolkata, India, Mar 7-9, 2013 (**Invited**).
41. N. Mahato, P. Mohapatra, S. Rawat, Kantesh Balani, “**Effect of Carbon Nanotube Reinforcement on The Phase Transformation of Zirconia**”, 2013 TMS Annual Meeting & Exhibition, San Antonio, TX, USA, Mar. 3-7, 2013.
42. N. Mahato, S. Ariharan, Kantesh Balani, “**Role of CeO₂ Addition on Catalytic Conversion of Plasma Sprayed Al₂O₃ Coatings**”, 2013 TMS Annual Meeting & Exhibition, San Antonio, TX, USA, Mar. 3-7, 2013 (**Invited**).
43. A. Gupta, S. Omar, Kantesh Balani, “**Enhanced Ionic Conductivity of CeO₂ Reinforced YSZ Nano composite Electrolyte**”. 4Th International Conference on Recent Advances in Composite Materials (ICRACM-2013), International Center Goa, Feb. 18-21, 2013.
44. P.K. Mallik, Kantesh Balani, B. Basu, “**Processing and Microstructure-Property of Multi Stage Spark Plasma Sintered Hydroxyapatite- Calcium Titanate Biocomposite**”, 37th International Conference & Exposition on Advanced Ceramics & Composites (ICACC), Daytona Beach, Florida, Jan. 27 – Feb. 1, 2013.
45. Kantesh Balani, “**Materials- Thermal Processing and Micro Structural characterization (Material testing lab)**”, Workshop on Virtual Laboratory, Indian Institute of Information Technology- and Design and Manufacturing, December 18, 2012.
46. A.K. Patel, Kantesh Balani, “**Role of Synergistic Reinforcement of Carbon Nanotubes and Al₂O₃ on Compression Molded Ultra High Molecular Weight Polyethylene Biocomposite**”, BIND-2012 (International Conference on Design of Biomaterials), Bangalore, Dec. 9-11, 2012 (**Invited**).
47. I. Bajpai, Kantesh Balani, B. Basu, “**Magnetic Characterization and Cytocompatibility of Spark Plasma Sintered HA-Fe₃O₄ Magnetic Biocomposites**”, 2012 MRS Fall Meeting, Boston, Massachusetts, Nov. 25-30, 2012.
48. Kantesh Balani, “**Carbon Nanotube Reinforced Tantalum Carbide as Ultra High Temperature Ceramic Composite**”, Advances in Materials and Processing: Challenges and Opportunities (AMPCO), IIT Roorkee, Nov. 2-4, 2012 (**Invited**).
49. P. Sengupta, N. Balaji, S.T. Aruna, M.K. Samal, D. Sathiyamoorthy, Kantesh Balani, “**Oxidation of Plasma Sprayed SiC/Al₂O₃ Coatings on Graphite Substrate**”, Carbon Materials 2012 in BARC Mumbai, November 1-3, 2012.
50. Kantesh Balani, “**Hydroxyapatite Based Biocomposites for Bone Replacement**” Daya Swoop Lecture for IEI Kanpur Chapter AGM on Oct. 28, 2012 (**Invited**).
51. Kantesh Balani, “**Toughened and Functionally Graded Hydroxyapatite-Based Biocomposite**”, Asian Symposium on Materials & Processing (ASMP 2012), Chennai, India, Aug. 30-31, 2012.
52. Kantesh Balani, “**Ultra High Temperature TaC as Rocket Nozzle Insert**”, Advances in Materials & Material Selection in Design (AM&MSD-2012), Kanpur, India, Aug. 24-25, 2012.

53. A. Nisar, R. Sharma, Kantesh Balani, “**Mechanical Properties of Spark Plasma Sintered ZnO Reinforced Hydroxyapatite**”, National Workshop on Advanced Functional Materials and Structures (AFMS-2012), Allahabad, India, July 12-14, 2012.
54. N. Mahato, D. Lahiri, A. Agarwal, Kantesh Balani, “**Microstructure and Mechanical Properties of Multistructured Peacock Feathers**”, presented in 2012 TMS Annual Meeting & Exhibition, Orlando, FL, USA, Mar. 11-15, 2012 (*Invited*).
55. S. Ariharan, A. Keshri, A. Agarwal, Kantesh Balani, “**Role of Yttria Stabilized Zirconia on Fracture Toughness of Plasma Sprayed Aluminum Oxide Composite Coatings**”, presented in 2012 TMS Annual Meeting & Exhibition, Orlando, FL, USA, Mar. 11-15, 2012.
56. A. K. Dubey, Kantesh Balani, B. Basu, “**Enhanced cellular response on Hydroxyapatite-BaTiO₃ composite: Material for bone application**”, International Science Congress (ISC-2011) Meeting, MRSCPS, Indore, MP, India, Dec. 24-25, 2011.
57. A. Gupta, S. Sharma, Kantesh Balani, “**Ceria doped 8 mol% yttria stabilized zirconia nanocrystalline electrolyte material for enhancement in ionic conductivity and low-temperature operation for Solid Oxide Fuel Cells**” ICAMMP-2011 (International Conference on Advances in Materials and Materials Processing), IIT Kharagpur, India, Dec. 9-11, 2011.
58. A. Gupta, S. Omar, Kantesh Balani, “**Ceria doped 8 mol% yttria stabilized zirconia nanocomposite electrolyte for enhanced ionic conductivity and low-temperature operation of Solid Oxide Fuel Cells**”, presented in the 65th Annual Technical Meeting (ATM) of the Indian Institute of Metals (IIM), Hyderabad, India, Nov. 15-16, 2011.
59. Kantesh Balani, Md. A. F. Afzal, P. Kesarwani, K. M. Reddy, S. Kalmodia, B. Basu, “**Functionally graded hydroxyapatite-alumina-zirconia**”, presented in MS&T 2011, Columbus Ohio, USA, Oct. 14-18, 2011.
60. Md. A. F. Afzal, Kantesh Balani, P. Kesarwani, K. M. Reddy, S. Kalmodia, B. Basu, “**Functionally Stepped Hydroxyapatite-Alumina-Zirconia: Potential Bone-Implant**”, Bio2011, CGCRI, Kolkata, India, Jul. 21-23, 2011.
61. V. Kumar, Kantesh Balani, R. Shekhar, Govind, “**Effect of hot rolling on microstructure and texture evolution of Mg-Li alloy**”. 5th Light Metals Technology Conference, Luneburg, Germany, 19-22 July, 2011.
62. A. Gupta, D. Lahiri, S. Ghosh, G. Tripathi, B. Basu, A. Agarwal, Kantesh Balani, “**Micro Tribology of Compression Molded Ultrahigh Molecular Weight Polyethylene Reinforced with Aluminum Oxide, Hydroxyapatite and Carbon Nanotubes**”, presented in TMS 140th Annual Meeting and Exhibition, San Diego, CA, Feb. 27 – Mar. 3, 2011.
63. M. R. Joshi, S. Ariharan, Kantesh Balani, “**Carbon Nanotube Reinforced Aluminium Oxide: Processing, Characterization and Modeling**”, presented in ALUMINAS 2010, CGCRI, Kolkata, India, Nov. 25-27, 2010 (*Invited*).
64. Kantesh Balani, V. Kumar, P. Kempe, Govind, R. Shekhar, “**Nano-Mechanical Characterization of Mg-Li Based Alloys**”, Indian Institute of Metals, Annual Technical Meeting, Bangalore, India, Nov. 15-16 2010.
65. Kantesh Balani, “**Nanoindentation of CeO₂ doped YSZ Electrolyte of Solid Oxide Fuel Cell**”, Hysitron Webinar in partnership with Materials Today (Elsevier), Oct. 28th, 2010.
66. V. Kumar, V.S. Raja, R. Shekhar, P. Mungole, P.P. Sinha, Kantesh Balani, “**Electrochemical Corrosion study of Novel Mg-Li Alloys**”. CORCON 2010 Corrosion Conference and Expo 2010, Goa, India, Sept. 23 - 26 2010.
67. A. Rishabh, Kantesh Balani, “**Evaluation of Fracture Toughness of Carbon Nanotube Reinforced Nano-Aluminum Oxide Via Fractal Approach**”, TMS 139th Annual Meeting and Exhibition, Seattle, WA, Feb. 14-18, 2010.

68. Kantesh Balani, Y. Chen, S. Omar, A.K. Keshri, S. Sharma, K. Babu, J.C. Nino, S. Seal and A. Agarwal, ***“Enhanced Ionic Conductivity of YSZ Electrolyte For Solid Oxide Fuel Cell”***, *Hydrogen and Energy Storage*, Jan. 14th 2010, Indian Institute of Technology Kanpur (**Invited**).
69. Kantesh Balani, R. G. Batista, D. Lahiri, A. Agarwal, ***“Non-wetting of Lotus Leaf”***, National Metallurgist’s Day, *Indian Institute of Metals Kolkata*, Nov. 16-17th 2009, Kolkata, India.
70. Kantesh Balani, A.K. Keshri, M. Joshi, D. Lahiri, S.R. Bakshi, J.E. Tercero, A. Agarwal, ***“Nanotribology of Plasma Sprayed Hydroxyapatite Reinforced with Aluminum Oxide and Carbon Nanotubes”***, *International Conference on Advanced Nanomaterials and Nanotechnology*, Dec. 9-11, 2009, Indian Institute of Technology Guwahati, India.
71. Kantesh Balani, J. Tercero, S. Kalmodia, S. Namin, D. Lahiri, T. Laha, N. Tsoukias, B. Basu, E. Lavernia, ***“Cytocompatibility of Hydroxyapatite Reinforces with Aluminium Oxide and Carbon Nanotubes”***, *The Fourth Asian Particle Technology Symposium (APT 2009)*, New Delhi, India, Sept. 14-16, 2009 (**Invited**).
72. P. Prakash, P. Jain, T. Mandal, Kantesh Balani, ***“Electrophoretic Deposition of nanocrystalline Hydroxyapatite on Ti6Al4V substrate with Intermediate Titanium Oxide Layer”***, *The Fourth Asian Particle Technology Symposium (APT 2009)*, New Delhi, India, Sept. 14-16, 2009.
73. Md. A. Faiz, P. Kesarwani, M. Reddy, B. Basu, Kantesh Balani, ***“Spark Plasma Sintering of Functionally Graded Hydroxyapatite-Alumina-Zirconia”***, *National Conference on Nanomaterials, Applications & Nanotechnology Applications*, Hyderabad, India, Sept. 4-5, 2009.
74. Kantesh Balani, Flavia C. Brito, Lidia Kos, Arvind Agarwal, ***“Nanomechanical Property Evaluation of Murine’s Tricuspid Heart Valve”***, *25th Southern Biomedical Engineering Conference*, Miami, FL, May 15-17, 2009.
75. A.K. Keshri, Kantesh Balani, T. Laha, S.R. Bakshi, A. Agarwal, ***“Comparative Study of Carbon Nanotubes/Plasma Interaction during Various Thermal Spray Processes”*** Presented in *International Thermal Spray Conference-2009* held in Las Vegas, Nevada, May 4-7, 2009.
76. S. Kalmodia, D. Lahiri, A. Agarwal, B. Basu, Kantesh Balani, ***“Superior Wear Resistance of Biocompatible Ultra High Molecular Weight Polyethylene Reinforced with Hydroxyapatite and Carbon Nanotubes”***, *25th Southern Biomedical Engineering Conference*, Miami, FL, May 15-17, 2009.
77. Kantesh Balani, Arvind Agarwal, ***“Improving the Fracture-Toughness of Plasma Sprayed CNT - Al₂O₃ Nano-composite Coating”***, *Processing and Fabrication of Advanced Materials*, Delhi, India, Dec 15-17, 2008.
78. Kantesh Balani, Arvind Agarwal, ***“Nanomechanical Properties of Ultra High Molecular Weight Polyethylene- Hydroxyapatite Composite Reinforced with Carbon Nanotubes”***, *Processing and Fabrication of Advanced Materials*, Delhi, India, Dec 15-17, 2008.
79. Kantesh Balani, A. Agarwal, Y. Chen, R. Anderson, S. Harimkar, E. Crumpler, N. Dahotre, ***“Bio-compatibility and Tribology of Plasma Sprayed Hydroxyapatite-Carbon Nanotube Coatings”***. *24th Southern Biomedical Engineering Conference*, El Paso, TX, April 18-20, 2008.
80. Kantesh Balani, S. Harimkar, N. Dahotre, A. Agarwal, ***“Multi-Scale Tribology of Plasma Sprayed Carbon Nanotube Reinforced Aluminum Oxide Nanocomposite Coating”***. Presented in *2008 TMS Annual Meeting & Exhibition*, New Orleans, LA, Mar. 9-13th 2008.
81. Kantesh Balani, A. Agarwal, ***“Plasma Sprayed Aluminum Oxide Nanocomposite Coatings Reinforced with Carbon Nanotubes: Processing, Microstructure and Mechanical Properties”***. Presented in *32nd International Conference and Exposition on Advanced Ceramics and Composites*, Daytona Beach, FL, Jan. 27-Feb. 1st 2008.

82. Kantesh Balani, T. Zhang, S. Bakshi, W. Li, A. Agarwal, “**Fracture Toughness Enhancement via Plasma Spraying of Insitu Grown CNT - Al₂O₃ Nano-composite Coating**”. Presented in TMS (The Minerals Metals and Materials Society) 2007 Annual Conference, Orlando, FL, Feb. 25- Mar. 1st 2007.
83. Kantesh Balani, Dr. Rebecca Anderson, Tapas Laha, Melanie Andara, Jorge Tercero, Dr. Eric Crumpler, Prof. Arvind Agarwal, “**Biocompatibility of Plasma Sprayed Carbon Nanotube Reinforced Hydroxyapatite Bioceramic Coating**”. Presented in ISRS (International Symposium for Research Scholars) 2006, IIT Madras, Chennai, India, Dec. 18-20th 2006.
84. Kantesh Balani, “**The World of Nanotechnology and Advanced Materials**”. Presented at International Workshop on MEMS and Nanotechnology, Coimbatore, India, Dec. 15th 2006 (**Invited**).
85. Kantesh Balani, Y. Chen, S.R. Bakshi, T. Laha, and A. Agarwal, “**Enhanced Fracture Toughening of Plasma Sprayed Aluminum Oxide-Carbon Nanotube Ceramic Composite**”. Presented in RAMP 2006 (Recent Advances in Materials Processing), Coimbatore, India, Dec. 15-16th 2006.
86. Kantesh Balani, Tapas Laha, Srinivasa R. Bakshi, Arvind Agarwal, “**CNT Dispersion in Plasma Sprayed Nano-Al₂O₃ – CNT Nano-Composite Coating**”. MS&T (Materials Science and Technology) 2006 Conference, Cincinnati, OH, Oct. 15-19th 2006.
87. Kantesh Balani, R. Anderson, T. Laha, M. Andara, J. Tercero, Arvind Agarwal, E. Crumpler, “**Biocompatibility of Plasma Sprayed Hydroxyapatite-CNT Nanocomposite Coating**”. MS&T (Materials Science and Technology) 2006 Conference, Cincinnati, OH, Oct. 15-19th 2006.
88. Kantesh Balani, T. Laha, R. Anderson, M. Andara, J. Tercero, E. Crumpler, A. Agarwal, “**Plasma Sprayed Bio-Ceramic Hydroxyapatite-MWNT Coating: Microstructural, Mechanical and Cell-Culture Studies**”. ITSC (International Thermal Spray Conference, Seattle, Washington, May 14th -18th 2006.
89. Kantesh Balani, T. Laha and A. Agarwal, “**Plasma Sprayed Aluminum Oxide –Carbon Nanotube Nanocomposite Coating**”. TMS (The Minerals Metals and Materials Society) 2006 Annual Conference, San Antonio, Texas, Mar. 12-16th 2006.

CONFERENCE PROCEEDING PUBLICATIONS, POSTER PRESENTATIONS, AND BOOK REVIEWS

1. A. Singh, D. Patel, J. Ramkumar, Kantesh Balani, “**Wettability Test of Various Viscosity Fluid over Laser Textured Polymeric Surfaces**”, All India Manufacturing technology, Design and Research (AIMTDR) Conference 2016, College of Engineering Pune (India), Dec. 16-18, 2016.
2. Shikha Awasthi, Sneha Goel, Chandra Prabha Pandey and Kantesh Balani, “**Multi-Length Scale Tribology of Electrophoretically Deposited Nickel-Diamond Coatings**”, 70th Annual Technical Meeting (70th ATM), of Indian Institute of Metals, Nov. 11-14, 2016, IIT Kanpur.
3. Alka Gupta, Shobit Omar and Kantesh Balani, “**Grain boundary mobility of CeO₂ Reinforced 8 mol. % Y₂O₃ stabilized ZrO₂ (8YSZ) ceramic**”, 70th Annual Technical Meeting (70th ATM), of Indian Institute of Metals, Nov. 11-14, 2016, IIT Kanpur.
4. Ariharan. S and Kantesh Balani, “**Effect of multi-walled carbon nanotubes reinforcement in the bending, compression strength and fracture toughness of alumina-zirconia nanocomposite for structural application**”, 70th Annual Technical Meeting (70th ATM), of Indian Institute of Metals, Nov. 11-14, 2016, IIT Kanpur.
5. Anil Kumar, Fahad Alam and Kantesh Balani, “**Effect of Fe₃O₄ and ZnO reinforcement on bioactivity and bacterial viability of hydroxyapatite based magnetic biocomposites**”, 70th Annual Technical Meeting (70th ATM), of Indian Institute of Metals, Nov. 11-14, 2016, IIT Kanpur.

6. Anup Kumar Patel, Kantesh Balani, “*Effect of Multiwalled Carbon Nanotube Functionalization on Protein Adsorption and Osteogenic Differentiation in Aluminum Oxide Reinforced Ultrahigh Molecular Weight Polyethylene Nanocomposites*”, 70th Annual Technical Meeting (70th ATM), of Indian Institute of Metals, Nov. 11-14, 2016, IIT Kanpur.
7. A. Nisar, S. Ariharan, Kantesh Balani, “*Microstructure and Thermal Stability of Spark Plasma Sintered CNT reinforced TaC and ZrB₂ based Ultra-High Temperature Ceramics*”, International Conference on Electron Microscopy and XXXVI Annual Meeting of the Electron Microscope Society of India (EMSI), Jul. 8-10, 2015, Mumbai, India.
8. M. Faisal, A. Gupta, S. Shervani, Kantesh Balani, A. Subramaniam, “*Enhanced Hydrogen Storage Properties in Mg-base hybrids synthesized by accumulative roll bonding*”, 20th World Hydrogen Energy Conference, WHEC 2014, Vol. 2, pp 1058-1064.
9. S. Shervani, Md. Faisal, A. Gupta, Kantesh Balani, A. Subramaniam, “*Hydrogen storage in Magnesium based hybrids using severe plastic deformation*”, International Conference on Hydrogen Storage Embrittlement and Applications (Hy-SEA 14), Brazil, Oct. 26-30, 2014.
10. A. Gupta, S. Shervani, Md. Faisal, Kantesh Balani, A. Subramaniam, “*Hydrogen Storage in Mg-Mg₂Ni-carbon hybrids*”, 14th International Symposium on Metal- Hydrogen Systems (MH-14), United Kingdom, July. 20-25, 2014.
11. Md. Faisal, A. Gupta, Kantesh Balani, A. Subramaniam, “*Magnesium Based Hybrids via Accumulative Roll Bonding For Hydrogen Storage*”, The 14th International Conference of the Union of Materials Research Societies in Asia (IUMRS-ICA 2013), Bangalore, Dec. 16-20, 2013.
12. R. K. Sharma, M. Agarwal, Kantesh Balani, “*Bactericidal Mechanism in Compression Molded ZnO-UHMWPE Biocomposites*”, Poster presentation, International conference on Polymeric Biomaterials, Bioengineering & Biodiagnostics”, New Delhi, India, October 27-30, 2014.
13. R.K. Sharma, A. Nisar, Kantesh Balani, “*Mechanical and Tribological Properties of Antibacterial ZnO- UHMWPE Biocomposites*”, 2013 TMS Annual Meeting & Exhibition, San Antonio, TX, USA, Mar. 3-7, 2013.
14. A.K. Patel, Kantesh Balani, “*Wettability and Tribological study of functionalized Carbon Nanotube and Al₂O₃ Reinforced Ultra High Molecular Weight Polyethylene Biocomposite*” International Conference on “Advances in Polymeric Materials” (APM 2013), innovations in Materials & Product Development, Central Institute of Plastic Engineering and Technology, Lucknow, Mar. 01-03, 2013.
15. A.K. Patel, Kantesh Balani, “*Tribological and Mechanical Study of Functionalized Carbon Nanotube and Al₂O₃ Reinforced Ultra High Molecular Weight Polyethylene Biocomposites*” International Conference (APA 2013) on “Polymers on the Frontiers of Science and Technology”, European Polymer Federation (EPF) Punjab University, Chandigarh, Feb. 21-23, 2013.
16. A. Gupta, S. Omar, Kantesh Balani, “*Development of CeO₂-Yttria Stabilized Zirconia Nanocomposite Electrolytes For Solid Oxide Fuel Cells*”. 2013 TMS Annual Meeting & Exhibition, San Antonio, TX, USA, Mar. 3-7, 2013.
17. B. Fatma, Md. Faisal, Kantesh Balani, A. Subramaniam, “*Hydrogen Storage properties of composites of Mg with carbon and Mg₂Ni produced by Accumulative Roll Bonding*”, Advances in Materials and Processing Challenges and Opportunities (AMPCO 2012), Roorkee, Nov. 2-4, 2012.
18. Kantesh Balani, “*Toughened and Functionally Graded Hydroxyapatite-Based Biocomposite*”, Asian Symposium on Materials & Processing (ASMP 2012), Chennai, India, Aug. 30-31, 2012.
19. Md. A.F. Afzal, S.Kalmodia, B.Basu, Kantesh Balani, “*Structural, mechanical and bactericidal properties of Silver reinforced carbon-nanotube/ hydroxyapatite composites*”,

International conference on Nanoscience and Technology, Hyderabad, India, Jan. 20-23, 2012.

20. K. S. Ramakrishna, Kantesh Balani and A. Upadhyaya, “**Effect of Compaction Pressure and Sintering Temperature on the Mechanical and Electrochemical Properties of Austenitic Stainless Steel (316L)**”, 65th Annual Technical Meeting (ATM) of the Indian Institute of Metals (IIM), Hyderabad, India, Nov. 15-16, 2011.
21. Vinod Kumar, Kantesh Balani, Rajiv Shekhar, Govind, “**Effect of hot rolling on microstructure and texture evolution of Mg-Li alloy**”. 5th Light Metals Technology Conference, Luneburg, Germany, 19-22 July, 2011.
22. Kantesh Balani, “**Engineering of Hydroxyapatite Based Bioceramic Composites**”, Indian National Academy of Engineering, Dec. 10th 2010, Visakhapatnam, India.
23. Milind R. Joshi, S. Ariharan, Kantesh Balani, “**Carbon Nanotube Reinforced Aluminium Oxide: Processing, Characterization and Modeling**”. Proceedings of ALUMINAS 2010, Indian Ceramics Society (INCerS), Kolkata, India, Nov. 25-27 2010, pp 39-50 (Invited).
24. V. Kumar, V.S. Raja, R. Shekhar, P. Mungole, P.P.Sinha, Kantesh Balani, “**Electrochemical Corrosion study of Novel Mg-Li Alloys**”. CORCON 2010 Corrosion Conference and Expo 2010, Goa, India, Sept. 23 - 26 2010.
25. M.R. Joshi, Ariharan S., Kantesh Balani, “**Fracture Toughness of 8 mol% Yttria Stabilized Zirconia Reinforced with Hydroxyapatite**”. Indian Institute of Metals, Annual Technical Meeting, Bangalore, India, Nov. 15-16 2010 (**First Prize**).
26. S. Sharma, K.M. Reddy, A. Simpsons, B. Basu, Kantesh Balani, “**Nano-mechanical and Micro-Structural Characterization of CeO₂ Doped YSZ Electrolyte for Solid Oxide Fuel Cell**”. Indian Institute of Metals, Annual Technical Meeting, Bangalore, India, Nov. 15-16 2010.
27. A. Gupta, D. Lahiri, S. Ghosh, G. Tripathi, B. Basu, A. Agarwal, Kantesh Balani, “**Tribological Behaviour of Ultrahigh Molecular Weight Polyethylene Composite Reinforced with Aluminum Oxide, Hydroxyapatite and Carbon Nanotubes Processed via Compression Molding**”. Indian Institute of Metals, Annual Technical Meeting, Bangalore, India, Nov. 15-16 2010.
28. Kantesh Balani, R. G. Batista, D. Lahiri, A. Agarwal, “**Non-Wetting of Lotus Leaf**”, Annual Technical Meeting, Indian Institute of Metals Kolkata. Nov. 16-17th 2009, Kolkata.
29. F.C. Brito, Kantesh Balani, A. Agarwal, L. Kos, “**Neural Crest Derived Melanocytes Affect the Biomechanical Properties of the Tricuspid Valve Leaflet**”, 2009 Weinstein, Cardiovascular Development Conference, San Francisco, CA May 7-9th 2009.
30. C. Khanal , G. Vargas , Kantesh Balani , A. Keshri , C. Barbosa , A. Agarwal , R. Panepucci, “**Metal embedded Fiber Brag Grating Sensors**”, *Physics Education* 2009 APS March Meeting, Pittsburgh, Pennsylvania, USA, March 16–20, 2009.
31. S. R. Bakshi, Kantesh Balani, A. Agarwal, “**Nanotribological Properties of Carbon Nanotube Reinforced Plasma Sprayed Aluminum-Silicon Alloy Composite Coatings**”, 2009 TMS Annual Meeting & Exhibition, San Francisco, USA, Feb. 15-19th 2009.
32. Kantesh Balani, A. Agarwal, Y. Chen, R. Anderson, S.Harimkar, E. Crumpler, N. B. Dahotre, “**Bio-Compatibility And Tribology Of Plasma Sprayed Hydroxyapatite-Carbon Nanotube Coatings**”, 24th Southern Biomedical Engineering Conference, El Paso, TX, Apr. 18-20th 2008.
33. Kantesh Balani, T. Laha, C. Yao, S.R. Bakshi, and A. Agarwal, “**Fracture Toughening of Plasma Sprayed Aluminum Oxide –Carbon Nanotube Nanocomposite Coating**”, Gordon Conference, Andover, New Hampshire, Aug. 13-18th 2006.
34. Kantesh Balani, G. Gonzalez, A. Agarwal, R. Hickman, J. S. O’Dell, and S. Seal, “**Microstructural Characterization and Mechanical Property Correlation of Vacuum Plasma Sprayed Tantalum Carbide**”. 2006 NSF Desigⁿ Service, and Manufacturing Research and Grantees Conference, St. Louis, MO, July 24-27th 2006.

35. [Kantesh Balani](#), G. Gonzalez, A. Agarwal, R. Hickman, and S.O. Dell, “*Synthesis And Characterization Of Vacuum Plasma Sprayed Tantalum Carbide*”. *Surface Engineering in Materials Science III Proceedings*, 2005 TMS Annual Meeting, San Francisco, CA, Feb 13-17, (2005), pp 241-248.
36. [Kantesh Balani](#), A. Agarwal and T. McKechnie, “*Near Net Shape Fabrication Via Vacuum Plasma Spray Forming*”. *Best Technical Paper* at *International Students and Research Scholars 2004* on 20-22nd Dec. 2004, Chennai, India.
37. J. Kartikeyan, T. Laha, [Kantesh Balani](#), A. Agarwal, and N. Munroe, “*Microstructural and Electrochemical Characterization of Cold Sprayed 1100 Aluminum Coating*”, (Published in *International Thermal Spray Conference (ITSC), Conference Proceedings*, Japan, May 2004).
38. [Kantesh Balani](#) and A. Agarwal. Book Review: “*Emerging Applications of Vacuum-Arc-Produced Plasma, Ion and Electron Beams*” edited by Efim Oks and Ian Brown (Published in *Materials and Manufacturing Process*, Mercel Dekker).
39. T. Laha, [Kantesh Balani](#), B. Potens, M. Andara, A. Agarwal, and S. Seal, “*Plasma Engineered Nanostructured Spherical Ceramic Powders*” *Surface and Interfaces of Nanostructured Materials Conference Proceedings*, 2004 TMS Annual Meeting, Charlotte, (March 2004), pp 103-112.
40. T. Laha, [Kantesh Balani](#), B. Potens, M. Andara, A. Agarwal, S. Patil and S.Seal, “*Plasma Engineered Nanostructured Spherical Aluminum Oxide Powders*”. Poster Presentation, *Florida American Vacuum Society (AVS)*, University of Central Florida, Orlando, (March 8-12th 2004).
41. T. Laha, and [Kantesh Balani](#), “*The Electrochemical Behavior of Al-Based Nanostructured Composite Coating in Acidic Medium*”. Poster presentation in *TMS 133rd Annual Meeting and Exhibition, Charlotte, (March 2004)*.

ACADEMIC/ RESEARCH HONORS

- Recipient of “**Metallurgist of The Year 2016**” in the “*Metal Science*” division instituted by Ministry of Steel, Govt. of India, on Nov. 14th 2016 during *National Metallurgist Day* celebration, Indian Institute of Technology, Kanpur, India.
- **Guest Editor**, *Journal of Thermal Spray Technology* (International Thermal Spray Conference 2015, ITSC2015, special issue), Springer.
- Serving on the **Editorial Board** of *Defense Science Journal* (published by Govt. of India, DRDO, Two years: 2015-16).
- **Outstanding Reviewer**,
Acta Biomaterialia Journal (Elsevier), May 2014.
Applied Surface Science (Elsevier), Feb. 2014
- Awarded **Young Scientist Award 2014** by Centre for Education Growth and Research, India International Centre, Delhi, Jul. 17, 2014.
- Selected to receive **IEI Young Engineers Award 2013-2014** in *Metallurgical and Materials Engineering* discipline by The Institution of Engineers (India), Bangalore, Feb. 26, 2014.
- Recipient of **P. K. Kelkar Research Fellowship** (Jun. 2013-May 2016) towards excellent publication record, teaching skills, and performing administrative duties at IIT Kanpur.
- **Editor of special thematic issue** on “*Solid Electrolytes: Emerging Global Competitors For Satisfying Energy Needs*” in *Journal Nanomaterials and Energy*, ICE Publications, Sept. 2012.
- **Letter of appreciation** from Chairman, Academic Senate, for **extraordinary teaching** the course MSE617 (Mathematics and Computational Methods) in Fall 2011.

- Recipient of “**2012 TMS Materials Processing & Manufacturing Division Young Leader Professional Development Award**” during TMS 2012 Annual Meeting Mar. 11-15, 2012 at Orlando, FL, USA.
- Awarded **Materials Science and Engineering C Young Researcher Award 2011** by Elsevier for exceptional research efforts involving materials for biological applications on Nov. 29, 2011, Boston, USA.
- Received **INAE (Indian National Academy of Engineering) Young Engineer Award 2010** on Dec. 10th 2010, Visakhapatnam, India.
- Have been chosen for **National Academy of Sciences, India (NASI) Young Scientist Platinum Jubilee Award 2010**, which was presented on Dec. 4th 2010, Jaipur, India.
- Received “**Young Metallurgist of the Year**” award 2010 instituted by *Ministry of Steel, Govt. of India*, on Nov. 14th 2010 during *National Metallurgist Day* celebration, Bangalore, India.
- **Young Scientist Award** 2009 in Materials Science division by **Indian Science Congress Association** on Jan. 5th 2010, Trivandrum, India.
- Awarded **Dr. R.L. Thakur Memorial Award-2009** from the **Indian Ceramic Society** on Dec. 11th 2009, Trivandrum, India.
- **Faculty Advisor** for “**Material Advantage @ IIT Kanpur**” since Dec. 2008. Chapter bagged “**Most Students Recruited**” membership challenge in Fall 2009 with a *cash prize of US\$ 500* competing against more than 60 active chapters worldwide. Then, chapter has also received “**Most Creative Recruitment Strategies Award**” in Fall 2011 with a cash award of *US\$ 250*.
- Selected by *National Phi Beta Delta Honor Society* to receive “**2007 David Merchant International Student Achievement Award**” owing to superior scholastic achievements. Annually only one international scholar is presented such a prestigious award worldwide. It consists of awarding \$500 check with the acknowledgment certificate. Among more than 150 chapters worldwide, as president of Phi Beta Delta –Zeta Alpha Chapter at FIU, I received “*Eileen M. Evans Overall Outstanding Chapter for 2006-07*”.
- Inducted as *full-member in Sigma Xi* honor society in Oct. 2007.
- Received “**2006-07 Dean’s Award**” for highly productive doctoral student in the College of Engineering, FIU, with monetary award of \$2000.
- Received “**Dissertation Year Fellowship**” to pursue doctoral research at Florida International University, 2006-07.
- Selected to attend *research-proposal writing workshop* organized by **National Science Foundation**, Aug. 22-23, 2007, University of Fairbanks, Alaska, USA.
- Awarded “**Best PhD Student**” by Department of Mechanical and Materials Engineering, FIU, for maintaining best grade point average, Spring 2005.
- Awarded “**National Science Foundation (NSF) Travel Scholarship**” to present a student poster during NSF Design and Manufacturing Innovation Conference at St. Louis, MO, July 24-27th 2006.
- **Won** a team technical quiz competition “**Materials Bowl**” during 2007 TMS (The Minerals, Metals and Materials) Annual meeting held in Orlando, Feb. 24-Mar. 1st, 2007. Overall twelve teams participated from colleges such as *Georgia Tech., Carnegie Mellon, Colorado School of Mines*, etc.
- Recipient of **RCTF (Research Challenge Trust Fund) Fellowship** for potential and capability in research at University of Kentucky during 2001-02.
- Awarded **Deutscher Akademischer Austausch Dienst (DAAD) Scholarship**, based on merit, to pursue M. Tech. Project at Materialprüfungsanstalt (State Material Testing), University of Stuttgart, Germany (May2000-Feb.2001).

- Awarded ***Sudharshan Bhat Memorial Prize*** and ***S. Ananthramakrishnan Memorial Prize*** for “**Best Academic Record**” in Metallurgical Engineering branch for M.Tech. at IIT (Indian Institute of Technology) Madras, India, 2001.
- Awarded as “**Best Outgoing Student**” by Department of Metallurgical Engineering, P.S.G. College of Technology, Coimbatore, India for overall excellence in academics and sports (1999).
- Secured **First Place** in the **Graduate Scholarly Forum** paper presentation competition, organized by Graduate Students Organization, FIU, Spring 2005, and also in Spring 2006.
- **Phi Kappa Phi** Honor Society Member at FIU, 2005. Phi Kappa Phi is renowned for academic excellence since its membership requires *GPA greater than 3.90 on the scale of 4.0*.
- Secured **Second Place** in the **Graduate Scholarly Forum** paper presentation competition, organized by Graduate Students Organization, FIU, Spring 2007.
- Received “**Best Technical Paper**” award in the *International Symposium of Research Students (ISRS)* 2004, Dec. 2004, Chennai, India.

LEADERSHIP HONORS

- **Chair**, *Indian Institute of Metals Kanpur Chapter* 2012-13, and 2013-14. **Led** to winning the **Best Medium Chapter Award 2012**.
- **Council Member**, *Indian Institute of Metals* (National Headquarters), 2012-13, and 2013-14.
- **Secretary**, *Indian Institute of Metals Kanpur Chapter* 2010-11 (and **won Best Small Chapter Award 2010**) and again in 2011-12 (**won Best Medium Chapter Award 2011**) India.
- **Faculty Advisor** of *Material Advantage at IIT Kanpur*, which has **won** the (i) “**Most Creative Recruitment Strategies Award**” during the 2011 Fall Membership Challenge, which includes citation and cash award of US\$ 250.00, and (ii) “**Most Recruited Students**” challenge for the Fall 2009, which includes citation in one of the AIST/ASM/ACerS/TMs journal and cash award of US\$ 500.
- **Founder, Secretary and Chair**, *Material Advantage at FIU*, 2004-07. *Material Advantage at FIU* has received “**Chapter of Excellence**” continuously *four times in a row* (2003-04, 2004-05, 2005-06, and 2006-07: since its inception) competing with more than 120 chapters worldwide. Chapter has been also winning “**World Materials Day Contest**” since the last three years 2004-05, and 2005-06, 2006-07.
- Selected by *National Phi Beta Delta Honor Society* to receive “**2007 David Merchant International Student Achievement Award**” owing to superior scholastic achievements. Annually only one international scholar is presented such a prestigious award worldwide. It consists of awarding \$500 check with the acknowledgment certificate. Among more than 150 chapters worldwide, as president of Phi Beta Delta –Zeta Alpha Chapter at FIU, I received “**Eileen M. Evans Overall Outstanding Chapter for 2006-07**”.
- **Student Advisor**, *Child Rights and You (CRY) America Action Center* at FIU, Miami, FL, 2006-07. CRY America at FIU is a *service organization* linked to serving under privileged children especially in India. The direct projects supported by CRY Inc. are available at http://america.cry.org/project_browse.asp.
- Nominated by Florida International University for “**Who’s Who Among Students in American Universities & Colleges**” Yearbook 2005. This elite edition circulates on the coffee-table of dignitaries around the world.
- Selected for prestigious **Arthur E. Focke LeaderShape** award for the Year 2004. One among six *selected worldwide* for the scholarship sponsored by professional **American Society of Metals** Foundation.
- **Chair**, *Material Advantage at FIU*, 2006-07.
- **President**, *Phi Beta Delta Honor Society*, FIU, 2006-07.

- **International Peer Mentor**, *International Students and Scholar Services (ISSS)*, FIU, 2005-07.
- **International Student Ambassador**, FIU, 2005-06.
- **Founder and President**, *FIU Badminton Club*, FIU, 2003-06
- **Action Center Leader**, *Child Relief and You (CRY) America Action Center* at FIU, Miami, FL, 2004-07.
- **Graduate Student Representative**, **Indian Students Association**, FIU, 2004-07.
- **Engineering Ambassador** to the *College of Engineering* at FIU, 2003-04.
- **Member**, **Departmental Curriculum Committee**, Mechanical and Materials Engineering Department, FIU, Miami-FL, 2004.

ADMINISTRATIVE:

Institute Level:

- Associate Dean, Hall Affairs**, May 2016-18.
- Chairman**, *Staff Gymkhana*, IIT Kanpur Feb. 2014- Feb. 2017.
- Warden in-charge**, Hall of Residence IV, IIT Kanpur, May 2014-Apr. 2016.
- Chairman, Senate Elections Committee**, IIT Kanpur, 2013-14.
- Warden** (Mess and Canteen), Hall of Residence IV, IIT Kanpur, Oct. 2011-May 2014.
- Academic Performance Evaluation Committee member**, 2011-12, 2012-13.
- Senate Scholarships and Prizes Committee member** 2010-11.
- Secretary, Faculty Club**, 2009-10, 2011-12.
- Faculty Guardian**, 2009-2013.

Department Level:

- MSE Departmental Summer Training/Internship** 2014-15.
- MSE Departmental Space Committee** 2014-15.
- MSE Departmental Under Graduate Committee** (member) 2013-14.
- Computer Coordinator**, MSE Dept. 2013-14.
- MSE Departmental Under Graduate Committee Convener**, 2011-12, and 2012-13.
- Departmental B. Tech. Project evaluation committee**: 2008-09/09-10/11-12.
- Professional- and Student- Seminar In-charge**, Fall 2008 – Spring 2010.

PROFESSIONAL AFFILIATION

Name of Professional Body	Year of Membership
The Minerals Metals and Materials Society	Since 2003
Indian Institute of Metals	Since 2008
American Society of Metals	Since Sept. 2009
Association of Iron and Steel Tech.	Since Sept. 2009
American Ceramics Society	Since Sept. 2009
Indian Ceramics Society	Since 2010
Indian Nuclear Society	Nov. 2011

TRAINING/MENTORING/ TUTORING

- Mentored **Mr. Abhineet Singh**, **Mr. Vikrant Trivedi**, **Ms. Swati**, and **Ms. Utkarshita Kaushal**, CSJM University Kanpur from Aug. 2015- Apr. 2016.
- Mentored **Mr. Ankur Agnihotri**, CSJM University Kanpur from Aug. 2013- Aug. 2014.
- Mentored **Ms. Meenakshi Agarwal**, Amity Institute of Nanotechnology, Amity University, Noida from May-July 2014 (~10 weeks).
- Mentored **Ms. Chaitali Garain**, NIT Durgapur, from May – July 2014 (~10 weeks) .

- e. Mentoring *Ms. Akanksha Mohan* from CSJM University, Kanpur from Jul. 2013 – May 2014.
- f. Mentored *Mr. Krishnendra Tripathi* from MPEC, Mandhana from Sep. – Dec. 2013.
- g. Mentored *Mr. Jitin Nair*, Department of Materials and Metallurgical Engineering, National Institute of Foundry and Forge Technology (NIFFT), Ranchi from May-July 2013.
- h. Mentored *Ms. Pratyasha Mohapartra* from National Institute of Technology, Rourkela, during Apr. – Jul. 2012 under SURGE (summer research grant for excellence) scholarship. *Ms. Mohapartra* received '**best project**' award during SURGE 2012.
- i. Mentored *Ms. Surabhi Singh* from Central Institute of Plastics Engineering and Technology, June-July 2012.
- j. Mentored *Ms. Katharina Herkendell*, **Karlshruhe Institute of Technology**, Germany, Apr.-June 2012.
- k. Mentored *Ms. Ambreen Nisar Khan*, Aligarh Muslim University, Jan.-Jun. 2012. Currently, she is pursuing PhD in my group at IIT Kanpur.
- l. Mentored two students under SURGE (Summer Undergraduate Research Grant for Excellence) scholarship *Ms. Sukriti Bhardwaj* from IIT BHU, and *Mr. Soumitra Sulekar* from VNIT Nagpur from May-Jul. 2011.
- m. Mentored *Ms. Sukriti Bhardwaj* from IIT BHU during Dec. 2011.
- n. Mentored *Mr. Pramanshu Trivedi* from Jul. 2011- Jul. 2012.
- o. Mentored *Ms. Archana Prakash* from CSJM University, Kanpur, from July – Sep. 2010.
- p. Mentored two students under SURGE (Summer Undergraduate Research Grant for Excellence) scholarship (*Mr. Savya Sachi*, and *Ms. Pallavi Kesarwani* during Jun.-Aug. 2010).
- q. Mentored two students under SURGE (Summer Undergraduate Research Grant for Excellence) scholarship (*Ms. Pallavi Kesarwani* from NIT Nagpur, India, and *Mr. Ram Krishna Mishra*, from NIT Warangal, India) during Jun.-Aug. 2009.
- r. Mentored 4 students (*Mr. Shubhra Bajpai*, *Mr. Manish Jain*, *Mr. Sachin Mishra* and *Mr. Saurabh Mishra*) during May 2009-July 2009.
- s. Mentored *Ms. Shilpi Goenka* from Punjab Engineering College during Dec. 2008-Jan. 2009.
- t. Mentored 30 (*thirty*) international students at FIU while serving as International Peer Mentor.
- u. Mentored *Ms. Debrupa Lahiri*, *Mr. Anup Kumar Keshri*, (post-graduate) *Mr. Jorge Tercero*, and *Mr. Riken Patel* (post-graduate) in Mechanical and Materials Engineering Fall 2006-Spring 2008. Mentored *Ms. Gabriela Gonzalez* (graduate) and *Ms. Melanie Andara* (undergraduate) in Mechanical and Materials Engineering.
- v. Mentored *Mr. Dayan Paez*, an undergraduate from **MIT (Massachusetts Institute of Technology)** for summer 2005 internship.
- w. Mentored *Mr. Raul Galindo* (now undergraduate at FIU) from Coral Gables- and *Mr. Francisco Vega* from Killian Senior high school in Miami during Fall 2005.
- x. Attended two day workshop on teaching skills by the "**Academy for the Art of Teaching**", Aug. 2004.

TEACHING:

MSE312 (Functional Materials Laboratory, 2015-16, Sem II)

TA201 (Tutor: Manufacturing Processes –I, 2015-16, Sem II, and 2008-09, Sem I).

MSE301 (Phase Transformation, 2015-16, Sem I).

MSE 676 (Materials Failure: Analysis and Prevention, 2014-15, Sem II).

MSE 694 (Nanostructures and Nanomaterials: Characterization and Properties, 2014-15, Sem I).

PG self-developed course.

TA201 (Manufacturing Processes –I, 2013-2014, Sem II). **UG institute core course.** Awarded "**Excellent Instructor**" appreciation in senate meeting.

MSE312 (Functional Materials Lab): 2013-2014, Sem II, 2014-15, Sem II. Co-instructor, and one of the founders of this course.

MSE 634 (Fundamentals of Spray Techniques, 2013-14, Sem I): **PG self-developed course**. Awarded “**Best Instructor**” appreciation in Senate meeting.

MSE480 (Materials Degradation and Prevention): UG core-course, 2012-2013, Sem II.

ESO203b (Partial Differential Equations): Awarded “**Excellent Tutor**” appreciation by Director, IIT Kanpur, through student-survey feedback during 2012-13, Sem I.

MME331 (Process Metallurgy Laboratory): Co-instructor, 2012-13, Sem II.

MSE 617 (Mathematics and Computational Methods): **PG Compulsory** 2011-12, Sem I, and 2012-2013, Sem I (joint instructor). Received ‘**Extraordinary Teacher**’ appreciation, by Director, IIT Kanpur, through student-survey feedback in 2011-12, Sem I..

MME250 (Materials Characterization, 2009-2010, Sem II, 2010-2011, Sem II, 2011-2012, Sem II): **UG Level Core Course with lab component**.

MME605 (Surface Phenomena and Characterization, 2009-2010, Sem I, 2010-2011, Sem I, 2011-2012, Sem I): PG/ Higher-level UG Course: **Self-Developed Course**.

MME 100 (Introduction to Profession, 2008-2009, Sem II): **UG Core course**

Tutor for TA201N- **Manufacturing Processes II**, 2008-2009, Sem I 2008-2009, Sem II.

RESEARCH PROJECTS:

A total of over Rs. 6.20 crores (~ US\$ 1M) with external funding of Rs. 5.08 crores (~US\$ 0.78M), and being the main PI for projects ~ Rs. 5.07 crores (US \$ 0.78 M).

COMPLETED PROJECTS:

1. **Board of Nuclear Research** (Jun. 2013- Jun. 2016) **Rs. 58.22 Lakhs**
PI: “*Oxidation of Graphite and Protective Coatings*”.
2. **Indian Space and Research Organisation** (Jul. 2013-Jul. 2015) **Rs. 21.94 Lakhs**
PI: “*Plasma Exposure Damage of Ultra High Temperature Ceramics*”.
3. **Indian Space and Research Organisation** (Mar. 2012-Mar. 2014) **Rs. 13.58 Lakhs**
PI: “*Role of Particle Size of Yttria Stabilized Zirconia on the Wear Resistance of the Plasma Sprayed Aluminum Oxide Coatings*”
4. **CARE grant from IIT Kanpur** (Dec. 2013) **Rs. 56 lakhs**
PI: “*Non Contact Optical Profilometer*”
5. **Department of Science and Technology** (Jul. 2011-Jul. 2013) **Rs. 29.48 Lakhs**
PI: “*Enhanced Ionic Conductivity of Solid Oxide Fuel Cell via nano-CeO₂ reinforcement in YSZ Electrolyte*”
6. **Naval International Cooperative Opportunities in Science and Technology Program** (NICOP) (Apr. 2012-Apr.2013) **Rs. 21.45 Lakhs**
PI: “*Plasma Sprayed Nano-Ceria-Alumina Composite Coatings for Catalytic Conversion of Combustion Gases*”

Collaborator: Dr. Xiaolin Zheng (Stanford University, CA, USA)

7. **Virtual Laboratory project (MHRD)** (Jun. 2010-Mar. 2013) **Rs. 43.84 Lakhs**

Sole PI: *“Material Response to Microstructural-, Mechanical- and Thermal- Stimuli”.*

8. **Department of Biotechnology** (May 2009- Oct. 2012) **Rs. 52.03 Lakhs**

PI: *“Investigation on Developing Ultrahigh Molecular Weight Polyethylene-Hydroxyapatite - Carbon Nanotube Biocomposite for Biomedical Applications”*

9. **Indian Space and Research Organisation** (Mar. 2009-Nov. 2011) **Rs. 15.50 Lakhs**

Sole PI: *“Corrosion protection of Mg-Li Alloys”*

10. **E-Book Development (MHRD)** (Apr. 2010-Apr. 2011) **Rs. 32.21 Lakhs**

Co-PI: *“E-book on Materials Science and Engineering”*

11. **CARE grant from IIT Kanpur** (Nov. 2009) **Rs. 45 lakhs**

PI: *“High Temperature Electrochemical Test Station”*

12. **Initiation Grant, IIT Kanpur** (Dec. 2008-Dec. 2009) **Rs. 10 lakhs**

PI: *“Electrostatic Spraying of Bioactive Ceramic Reinforced Polymer Bio-coating”*

ONGOING PROJECTS:

13. **Department of Biotechnology (DBT)** (Nov. 2015-Nov. 2020) **Rs. 11.41 lakhs** (Total: **Rs. 500.60 lakhs**)

Coordinator (IIT Kanpur): *Programme Support on Translational Research on Biomaterials for Orthopaedic and Dental applications”*

14. **Indian Space and Research Organisation** (Jul. 2015-Jul. 2017): **Rs. 28.8 lakhs**

PI: *“Physical Metallurgy of Mg-Li Based Alloys – Phase II”.*

15. **Indian Space and Research Organisation** (Aug. 2014-Jun. 2017): **Rs. 27.6 lakhs**

Co-PI: *“Feasibility Study on Development of High Temperature and Ultra High Temperature Composites for TPS Applications”.*

16. **Virtual Laboratory project (MHRD)** (Sept. 2014 – Mar. 2017) **Rs. 100.2 Lakhs**

Coordinator: *Integration of Virtual Labs at IIT Kanpur*

17. **Department of Science and Technology** (Dec. 2013- Dec. 2016) **Rs. 52.3 lakhs**

Co-PI: *“Development of Higher Conductive Sc₂O₃-ZrO₂ Based Electrolyte for Solid Oxide Fuel Cells”.*

18. **Indian Space and Research Organisation** (Aug. 2016- Aug. 2018): **Rs. 28.93 lakhs**

PI: *“Fabricating of Porous Copper with Carbon Nanotube Reinforcement for Loop Heat Pipe Application”.*

UNDER CONSIDERATION:

19. **Department of Science and Technology** (Technology Systems Development Program, *TSDP*) (May 2016-May 2020) Rs. 56.52 lakhs (Total: **Rs. 12.24 Crores**)

Co-PI: “*Laser Assisted Materials Processing (LAMP)*”

(Submitted Sept. 2015, Tentatively approved, Feb. 2016)

20. **IMPRINT:** (Jun. 2016-Jun. 2018): **Rs. 2.46 crores** (In *Third-stage of review*)

PI: *Development of ZrB₂-SiC Based Materials for Nose-Cone Leading Edge in Re-entry Space Vehicles*

21. **Naval International Cooperative Opportunities in Science and Technology Program, NICOP** (Jun. 2016-Jun. 2018): Rs. 40 lakhs

PI: *Antifouling Low-Drag Coatings of Ultra High Molecular Weight Polyethylene: Role of ZnO Nano/Micro Structures*

22. **Department of Science and Technology:** **Rs. 85.80 lakhs (to be submitted)**

Co-PI (IIT Kanpur): *Research On Production And Utilization Of Methanol & Di-Methyl Ether As Sustainable Fuel*

OTHER Funds (Conference & Workshop):

1. Indian National Academy of Engineering: Rs. 10 lakhs (Jun. 2016)

Co-PI: Organizing “National Frontiers of Engineering Conference” Jun. 23-25, 2016.

2. Department of Science and Technology: Rs. 38 lakhs (Apr. 2016)

Session Chair, “Indo-German Frontiers of Engineering”, May 19-22, Potsdam, Germany.

3. Office of Naval Research Global: US \$5,000 (Apr. 2011)

PI: Workshop on *Nano-Biomaterials CHAMPS (Characterization, Hierarchy, Advanced Material Processing and Surfaces)* Apr. 25-29, 2011 at IIT Kanpur

4. Department of Science & Technology: Rs. 1,00,000/- (Dec. 2010)

PI: *Materials Conclave* (Dec. 19-21, 2011) at IIT Kanpur

5. Department of Science & Technology: Rs. 50,000/- (Jan. 2010)

+ US \$ 2,000 (from Hysitron, and Rs. 50,000 from Aimil Ltd. Sinsil Ltd.)

PI: *Hydrogen & Energy Storage* (Jan. 14, 2011) at IIT Kanpur

GUIDANCE:

B. Tech. 18 completed (1 dual degree and 2 BTPs ongoing)

M. Tech. 13 completed (1 ongoing)

Ph.D. 6 completed (12 ongoing)

Interns 24 guided (2 ongoing)

Thesis supervised at IIT-Kanpur:

Post-Doctoral Researchers:

Name	Worked On	Duration	Current Position
Dr. Neelima Mahato	1. Solid Oxide Fuel Cells 2. CeO ₂ -based catalytic conversion 3. Iridescence in peacock feathers 4. Electrodeposition of Diamond-Nickel	Mar. 2011- Oct. 2013	Assistant Professor (Foreign Research Professor) School of Chemical Engineering Yeungnam University Gyeongsan, Republic of Korea
Dr. Vandana Singh	1.Synthesis of Polyaniline-Ceria Composites and Study their Dielectric Properties 2.Electrodeposition of Ni-diamond coatings	Nov. 2012-2013	Copenhagen, Denmark

Doctoral Students (Ph.D.): Completed (6); Ongoing (12)

Students	Dissertation Title	Co-supervisor	Completion	Current Position
Dr. Vinod Kumar	Development of Corrosion Protection Mg Alloy for Aerospace Application	Prof. Rajiv Shekhar	Dec. 2011	<i>Assistant Professor</i> at <i>Malaviya National Institute of Technology, Jaipur, India</i> (since Jan. 2012)
Dr. Ashutosh Kumar Dubey	Electric Field Stimulated Cell Response on Electrically Active Hydroxyapatite-BaTiO ₃ Composite	Prof. Bikramjit Basu	Dec. 2011	<i>Assistant Professor</i> at <i>IIT BHU (Since Dec. 2015)</i> <i>JSPS Fellow: May 2012-Dec. 2015</i>
Dr. Prafulla K. Mallik	Hydroxyapatite- CaTiO ₃ Based Electrically Active Biocomposites	Prof. Bikramjit Basu	Jun. 2013	<i>Assistant Professor</i> , Indira Gandhi Institute of Technology, Orissa
Dr. Indu Bajpai	Magnetically Active Hydroxyapatite- Fe ₃ O ₄ Based Biocomposites	Prof. Bikramjit Basu	Jun. 2013	<i>Post. Doctoral researcher</i> , Yeungnam University Gyeongsan, Republic of Korea
Dr. Ishani Shukla	Model-Based Management Of Steel Making-Continuous Casting	Prof. Deepu Philip	May 2015	Completed. On maternity break until May 2016
Dr. Rajeev Sharma	Role of ZnO morphology on Antibacterial Properties of Ultra High Molecular Weight Polyethylene (UHMWPE)	none	Apr. 2016	Completed. <i>Post-doctoral researcher in BPCL, IIT Kanpur.</i>

	Biocomposite			
Ms. Alka Gupta	Role of Ceria Reinforcement in Yttria Stabilized Zirconia for Solid Oxide Fuel Cell	Prof. Shobit Omar	Jan. 2017	<i>Completed</i>
Mr. Anup K. Patel	Role of Synergistic Reinforcement of Al ₂ O ₃ and Functionalized Carbon nanotubes (CNTs) in Ultra High Molecular Weight Polyethylene (UHMWPE) Biocomposite	none	Feb. 2017 (Expected)	<i>Thesis submitted on Oct. 04, 2016</i>
Ms. Ambreen Nisar	Processing and Characterization of TaC and ZrB ₂ based Ultra-High Temperature Ceramic Composites	none	Apr. 2017 (expected)	<i>Ph.D. scholar Open Seminar delivered on Sept. 02, 2016</i>
Md. Faisal	Hydrogen Storage on Mg-Based Hybrids	Prof. Anandh Subramaniam	Sept. 2017 (expected)	<i>Ph.D. scholar (Open Seminar expected ~Mar. 2017)</i>
Satish Kanhed	Role of Porosity on the Mechanical Properties and Cytocompatibility of Hydroxyapatite Bioceramic	Prof. Anish Upadhyaya	Apr. 2017 (expected)	<i>Ph.D. scholar (Open Seminar Jan. 04, 2017)</i>
Mr. S. Ariharan	Processing and Characterization of Yttria-Stabilized-Zirconia and Carbon-Nanotubes Reinforced Al ₂ O ₃ Thermal Barrier Coatings	none	May 2017 (expected)	<i>Ph.D. scholar (Open Seminar Jan. 02, 2017)</i>
Mr. Fahad Alam	Quantification of Adhesion Strength of Cells on the Surface of Biomaterials	none	Feb. 2017 (expected)	<i>Ph.D. scholar (Open Seminar Nov. 03, 2016)</i>
Rita Maurya	Cytocompatibility and High Temperature Properties of Mg-Li based Biometallic Alloy	none	Apr. 2017 (expected)	<i>Ph.D. scholar (Open Seminar expected ~Feb. 2017)</i>
Abdul Siddiqui	Catalytic Property of Ceria Based Composites	none	Jul. 2017 (expected)	<i>Ph.D. scholar (Open Seminar expected ~Feb. 2017)</i>
Mr. Anshul Gupta	Hydrogen Storage in Mg-based Composites	Prof. Anandh Subramaniam	Aug. 2017 (expected)	<i>Ph.D. scholar (Open Seminar expected ~Feb. 2017)</i>
Ms. Aditi Pandey	Assisted Cell Growth in Ceria Reinforced Hydroxyapatite-ZnO Based Biocomposites	tbd	Aug. 2017 (expected)	<i>Ph.D. scholar (Open Seminar expected ~Mar. 2017)</i>
Ms. Abhilasha	Effect of Texture on the Tribological and Biological Properties of Metallic Substrates	Prof. J. Ramkumar	Discontinued (Health reasons)	<i>Newly joined Dec. 2015</i>
Ms. Sudha	On Double Perovskite	Prof. Tanmoy		<i>Newly joined</i>

	Structures	Maiti		May 2016
Ms. Chinmayee Nayak	Functionally Graded Porosity on Biometallic Bone Implants	none		Newly joined Jul. 2016

Masters Students: Completed (13); Ongoing (4)

Students	Dissertation Title	Co-Supervisor	Completion	Currently at
Mr. Ankur Gupta	Compression Molding of Ultra High Molecular Weight Polyethylene (UHMWPE) Reinforced with Hydroxyapatite, Aluminum Oxide and Carbon Nanotubes	-N.A.-	May 2011	<i>Pursuing PhD. At University of Central Florida</i>
Mr. Milind R. Joshi	Spark Plasma Sintering of Ytria Stabilized Zirconia Reinforces with Hydroxyapatite and Carbon Nanotubes	-N.A.-	May 2011	<i>Tata Motors, Pune</i>
Mr. Samir Sharma	Processing of Ceria Doped Ytria Stabilized Zirconia Electrolyte for Solid Oxide Fuel Cell	-N.A.-	May 2011	<i>Ashok Leyland, Chennai</i>
Mr. S. Ariharan	Role of Particle Size of Ytria Staibilized Zirconia on Plasma Sprayed Alumina Composites	-N.A.-	May 2011	<i>Pursuing PhD. At IIT Kanpur</i>
Mr. S. Ramakrishna	Effect of Process Variables and Electrostatic Spray Coating on the Mechanical, Electrochemical and Tribological Response of Sintered Stainless Steels	Prof. Anish Upadhyaya	May 2012	<i>Tata Steel R&D, Jamshedpur</i>
Mr. Pradyut Sengupta	Oxidation Studies of SiC-Al ₂ O ₃ Coatings on Graphite	-N.A.-	May 2013	Asst. Prof., Glocal University , Mirzapur
Mr. Koushik Sikdar	Fretting of Mg-based LAT971 and LATZ9531 Alloys	Prof. Shashank Shekhar	Jul. 2013	<i>Essar Steel Plant, Hazira</i>
Mr. Amitava Banerjee	Catalytic Properties of Gadolinia-Doped-Ceria (GDC) - CeO ₂ Based Composites	-N.A.-	May 2014	<i>Joined Ph.D. at Uppsala University</i>
Mr. Shalabh Srivastava	Composites of CNF/Graphene and Carbon Aerogel with MnO ₂ for Supercapacitor Applications	Prof. Ashutosh Sharma	Jul. 2014	Completed
Ms. B. Ishamol	Ionic conductivity study of ytterbia co-doped scandia stabilized zirconia electrolyte	Prof. S. Omar	Jun. 2015	<i>Saint Gobain, Chennai</i>
Mr. Binit kumar	Effect of carbon morphologies on friction stir deformation of Al 6061 alloy	Prof. J. Ramkumar	Jul. 2015	<i>Faculty at GL Bajaj ITM, Greater Noida</i>
Ms. Rubia Hassan	Effect of Carbon Nanotube on Toughening of Ytria Stabilized Zirconia	-N.A.-	May 2016	Completed

Mr. Mohit Sanbui	Structural and Ionic Conductivity Study of Ceria Co-doped Scandia Stabilized Zirconia as an Electrolyte for IT-SOFC	Prof. Shobit Omar	May 2016	<i>Tata Steel, Jamshedpur</i>
Mr. Shashwat Singh	Ageing Effects With Co-doping of Yb ₂ O ₃ and Sc ₂ O ₃ in ZrO ₂ electrolyte.	Prof. Shobit Omar	May 2017 (Expected)	
Mr. Anil K. Bisla	Effect of Magnetic Field on the Cell growth of Multifunctional Fe ₃ O ₄ -ZnO Reinforced Polymer		May 2017 (expected)	
Ms. Shruti Dubey	On Ultra High Temperature Ceramics			Newly joined (Jul. 2016)
Mr. Arjak Bhattacharjee	On Functionally porous Bone Scaffolds			Newly joined (Jul. 2016)

STUDENTS' ACHIEVEMENTS

1. Ms. Rubia Hassan received “***Bogineni Chenchu Raman Naidu***” **Gold Medal** for securing best CPI in the Materials Science and Engineering Department, IIT Kanpur, 2016.
2. Ms. Rubia Hassan received “***Cadence Gold Medal***” for securing best overall performance in the M. Tech. thesis among all the disciplines, IIT Kanpur, 2016.
3. Ms. Shikha Pandey was awarded “***Bharat Jyoti Award***” from Indian Friendship Society on Jun. 09, 2016. Earlier, this award is also given to Mother Teresa and Sunil Gavaskar.
4. Mr. Amitava Banerjee was awarded prestigious “***IIM Dr. AK Bose Gold Medal***” for his M.Tech. thesis during Indian Institute of Metals’ Annual Technical Meeting on Nov. 14, 2014 at College of Engineering, Pune.
5. Mr. Amitava Banerjee received “***Bogineni Chenchu Raman Naidu***” **Gold Medal** for securing best CPI in the Materials Science and Engineering Department, IIT Kanpur, 2014.
6. Mr. Mohammad Faisal is selected as President’s Council of Student Advisors (PCSA) delegate for year 2014-15 by The American Ceramic Society.
7. Mr. Prashant Kumar was awarded ***Best Oral Presentation Award*** for “*Pulsed Electrodeposition of Nano-Crystalline Ni with Uniform Co-Deposition of Micron Sized Diamond Particles on Annealed Copper Substrate*” BTDD (Behind the Teachers Desk) Seminar held at National Metallurgy Laboratory Jamshedpur on 27-28 March 2014.
8. Suboohi Shervani, Mohammad Faisal, Anshul Gupta, Kantesh Balani and Anandh Subramaniam, “*Hydrogen Storage in Mg-Mg₂Ni hybrids by accumulative roll bonding*” was awarded ***First Prize*** in the Structural Materials Category at the International Conference on Emerging Materials and Processes held at Institute of Minerals and Materials Technology (IMMT), Bhubaneswar from 26th to 28th Feb, 2014.
9. Dr. Prafulla Kumar Mallik, is serving as ***Assistant Professor***, Indira Gandhi Institute of Technology, Orissa.
10. Mr. Pradyut Sengupta was awarded prestigious “***IIM Dr. AK Bose Gold Medal***” for his M.Tech. thesis during Indian Institute of Metals’ Annual Technical Meeting on Nov. 14, 2013 at IIT BHU, Varanasi.
11. Mr. Pradyut Sengupta received “***Bogineni Chenchu Raman Naidu***” **Gold Medal** for securing best CPI in the Materials Science and Engineering Department, IIT Kanpur, 2013.
12. Mr. Kandala Ramakrishna received “***Dr. Baldeva Upadhyaya Gold Medal***” for best M. Tech. thesis in the Department of Materials Science and Engineering, in 2012.

13. Mr. Raja Choudhary received “**Best B. Tech. Project Award**” in the Department of Materials Science and Engineering, IIT Kanpur, in 2013.
14. Mr. Anup Kumar Patel received “**Best Paper Award**” for his poster on “**Wettability and Cytocompatibility Study of Functionalized Carbon Nanotube and Al₂O₃ Reinforced Ultra High Molecular Weight Polyethylene Biocomposite**” (with Rs.5000/- cash award) during ISRS (*International Symposium for Research Scholars*) 2012 conference held at IIT Madras during Dec. 13-15, 2012.
15. Ambreen Nisar, Rajeev Kumar Sharma, Kantesh Balani, received **First Prize** for his poster on, “**Mechanical Properties of Spark Plasma Sintered ZnO Reinforced Hydroxyapatite**”. Author received cash award of Rs. 1500/- (Rupees one thousand five hundred only) in AFMS (*Advanced Functional Materials and Structures*) workshop held in Allahabad during July 12-14, 2012.
16. Dr. Vinod Kumar is **serving as Assistant Professor** of Malaviya National Institute of Technology, Jaipur, India (Jan. 2012).
17. Dr. Ashutosh K. Dubey, Ph.D. student received **Young Scientist Award** 2011 in Materials Science division by **Indian Science Congress Association**. Currently a JSPS (**Japan Society for Promotion of Science**) post-doctoral research scholar at Nagoya Institute of Technology, Japan.
18. Mr. Atif Faiz received “**Best B. Tech. Project Award**” in the Department of Materials Science and Engineering, IIT Kanpur, in 2011.
19. Milind Raghuvveer Joshi, Ariharan S., Kantesh Balani, Received **First Prize** in the *Functional Materials Section*, “**Fracture Toughness of 8 mol% Yttria Stabilized Zirconia Reinforced with Hydroxyapatite**”. *Indian Institute of Metals, Annual Technical Meeting*, Bangalore, India, Nov. 15-16 2010.

ORGANIZER OF CONFERENCES/ WORKSHOP

1. Co-organizer, “*Annual Technical Meeting 2016*” of **Indian Institute of Metals** at IIT Kanpur during Nov. 11-13, 2016.
2. Co-organized “*National Frontiers of Engineering*” at IIT Kanpur during Jun. 23-25, 2016.
3. Indian-session organizer of session on “*Exploring Length Scales in Biomechanics*” during **Indo-German Frontiers of Engineering** at Potsdam, Germany, May 19-22, 2016.
4. Organized 1.5 day workshop on “**Instrumented Indentation**” at Advanced Center for Materials Science, IIT Kanpur on Jan. 30-31, 2016.
5. Organized half-day workshop on **Virtual Laboratories** at *Puranchandra Vidya Niketan*, Kanpur, on Oct. 31, 2015 (>65 participants).
6. Organized one half-day workshop on **Virtual Laboratories** at *Global Group of Institutions*, Lucknow, on Apr. 29, 2015 (~100 participants).
7. Organized one half-day workshop on Virtual Laboratories at Ambedkar Institute of Technology for Handicapped (AITH), Kanpur, on Apr. 22, 2015 (~50 participants).
8. Organized one-day workshop on “**Virtual Laboratories**” under the aegis of *Ministry of Human Resource and Development*, Government of India, National Mission on Education through Information and Communication Technology (NMEICT) on Mar. 15, 2015 at IIT Kanpur, India (over 150 participants).
9. Lead organizer for symposium on “**Nanomechanics of Biomaterials**” during *Materials Science & Technology 2014 Conference and Exhibition (MS&T’14)* October 12-16, 2014, Pittsburgh, Pennsylvania, USA.
10. Co-organizer of Quality Improvement Program (QIP) Course on “**Advanced Engineering Materials for Structural Applications**” organized during Aug. 17-22, 2014, IIT Kanpur.
11. Co-organizer of Workshop on “**Advanced Materials Processing and Characterization**” organized during Aug. 17-22, 2014, IIT Kanpur.

12. Lead Organizer for one-day workshop on “**Virtual Laboratories**” under the aegis of *Ministry of Human Resource and Development*, Government of India, National Mission on Education through Information and Communication Technology (NMEICT) on Dec. 07, 2012 at IIT Kanpur, India (~60 participants).
13. Organized half-day workshop on “**Virtual Laboratory on Material Response to Microstructural, Mechanical, Thermal and Biological Stimuli**” for undergraduate students on Nov. 03, 2012 at IIT Roorkee, India (over 15 participants).
14. Organized one-day workshop on “**Virtual Laboratory on Material Response to Microstructural, Mechanical, Thermal and Biological Stimuli**” for students on Oct. 13, 2012 at IIT Kanpur, India, under the aegis of *Ministry of Human Resource and Development*, Government of India, National Mission on Education through Information and Communication Technology (~40 participants).
15. Organized one-day workshop on “**Virtual Laboratories**” under the aegis of *Ministry of Human Resource and Development*, Government of India, National Mission on Education through Information and Communication Technology (NMEICT) on Feb. 4, 2012 at IIT Kanpur, India (over 160 participants).
16. Lead organizer of a symposium on “**Emerging Frontiers in Surface Engineering of Biomaterials**” during *Materials Science & Technology 2011*, held during Oct. 16-20th 2011 at Columbus OH, USA. Co-organizers Profs. A. Agarwal (FIU), S. Harimkar (OSU), and W. O. Soboyejo (Princeton).
17. Main organizer of workshop on “**Nano-Biomaterial CHAMPS (Characterization, Hierarchy, Advanced Material Processing and Surfaces)**” held during Apr. 25-29th 2011 at IIT Kanpur, India. Co-organizers: *Prof. Roger Narayan* (UNC/NCSU Joint Department of Biomedical Engineering), and *Prof. Bikramjit Basu* (Lab. Of Biomaterials, IIT Kanpur).
18. Organized “**Materials Conclave**” on Dec. 19-21st 2010 at IIT Kanpur, India.
19. Main organizer of “**Hydrogen and Energy Storage**” International Symposium on Jan. 14th 2010 at IIT Kanpur, India.
20. Principal organizer of Short Term Course on “**Processing Characterization and Properties of Advanced Engineering Materials**”, Feb. 24-28th 2010, at IIT Kanpur, India.
21. Lead organizer of Workshop on “**Recent Trends in Surface Engineering**” from Feb. 25-28th 2010 at IIT Kanpur, India.

PEER-REVIEW ACTIVITIES

Editorial Board

Journal of Thermal Spray Technology (Associate Guest Editor, May 2016 issue)

Defense Science Journal (Editorial Board: GoI, DRDO, Two years: 2015-16).

Nanomaterials and Energy (Associate Editor, ICE Publishing), Mar. 2011 Onwards.

Recent Patents on Materials Science (Bentham), 2010-2015

Recent Patents on Nanotechnology (Bentham), 2010-2015

Journal of Materials & Metallurgical Engineering (STM Journals), 2011 onwards

Journal of NanoScience, NanoEngineering & Applications (STM Journals), 2011 onwards

Journal of Engineering (Hindawi), Jul. 2012 onwards

Indian Journal of Materials Science (Hindawi), Apr. 2013 onwards

Key Reader

Metallurgical and Materials Transactions A (Springer)

Journals (Reviewer):

- Certificate of **Outstanding Contribution** in Reviewing (*Acta Biomaterialia*, May 2014)
- Certificate of **Outstanding Contribution** in Reviewing (*Applied Surface Science*, Feb. 2014)

ACS Publications (Applied Materials and Interfaces)

ASM (Journal of Materials Engineering and Performance)

Bentham Science (Recent Patents on Materials Science)

Blackwell Publishing Inc. (International Journal of Applied Ceramic Technology, and Journal of American Ceramic Society)

Cambridge Core (Journal of Materials Research)

Elsevier (Acta Biomaterialia, Applied Surface Science, Carbon, Ceramics International, Composites Part A, Composites Part B, Computational Materials Science, European Journal of Mechanics – B, Journal of Alloys and Compounds, Journal of European Ceramic Society, Journal of Materials Science and Technology, Journal of the Mechanical Behavior of Biomedical Materials, Journal of Physics and Chemistry of Solids, Materials Characterization, Materials Chemistry and Physics, Materials and Design, Materials Letters, Materials Research Bulletin, Materials Science and Engineering A, Materials Science and Engineering C, Nuclear Engineering and Design, Powder Technology, Surface and Coatings Technology, Thin Solid Films, Vacuum)

Highwire (Journal of Medical Microbiology)

Hindawi (Advances in Tribology, Journal of Engineering)

Indian Academy of Science (Sadhana - Academy Proceedings in Engineering Science)

Institution of Civil Engineers (Nanomaterials and Energy)

Materials Research Society of India and the Indian National Science Academy (Bulletin of Materials Science)

National Journals (Current Science, DRDO Defense Journal, Indian Journal of Engineering and Materials Sciences)

Nature Publishing Group (Scientific Reports)

NISCAIR (Indian Journal of Engineering and Material Sciences)

PLOS ONE (PLOS ONE)

Royal Society of Chemistry (Journal of Materials Chemistry B, RSC Advances)

SAGE Journals (Journal of Biomaterials Applications, Proceedings of the Institution of Mechanical Engineers, Part C, Journal of Mechanical Engineering Science)

Serials Publications Pvt. Ltd. (International Journal of Nano Science, Nano Engineering and Nanotechnology)

Springer (Biointerphases, Ionics, Journal of Advanced Ceramics, Journal of Materials Science: Materials in Medicine, JOM Journal of Metals, Metallurgical and Materials Transactions A, Minerals and Materials, Journal of Thermal Spray Technology, Transactions of the Indian Institute of Metals)

STM Publications (Journal of Materials & Metallurgical Engineering, Journal of NanoScience NanoEngineering & Applications, Journal of Polymer & Composites)

Taylor and Francis (Materials Technology: Advanced Performance Materials)

Wiley (Advanced Biomaterials, Journal American Ceramic Society, Journal of Biomedical Materials Research: Part B – Applied Biomaterials, Polymer Composites)

Book (Reviewer): Materials and Manufacturing Processes, Materials and Manufacturing Processes - Efim Oks and Ian Brown; Kluwer Academic Publishers (Marcel and Dekker).