

Narendra B. Dahotre Ph.D.
Fellow of ASM, ASME, SME, AAAS, NAI, AIMBE, WIF, IIM, MRSI

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EDUCATION

- **1987 - Ph.D., Materials Science & Engineering**, Michigan State University
- **1983 - M.S., Metallurgical Engineering**, Michigan State University
- **1980 - B.S., Metallurgical Engineering**, University of Poona, India

PROFESSIONAL EXPERIENCE

- **May 2013-Present**, University Distinguished Research Professor, University of North Texas
- **January 2010-December 2013**, Chairman and Professor, Department of Materials Science and Engineering, University of North Texas.
- **August 2014-Present** (courtesy appointment), Professor of Biomedical Engineering, University of North Texas
- **February 2011-Present** (courtesy appointment), Professor of Mechanical and Energy Engineering, University of North Texas
- **August 1999-December 2009**, Professor of Materials Science and Engineering, University of Tennessee.
- **August 2002-August 2009**, UT-ORNL Professor of Materials Science and Engineering, University of Tennessee. Joint faculty appointment with University of Tennessee and Oak Ridge National Laboratory.
- **July 2002 – June 2003**: Vice-Chairman, Center for Laser Applications, a Center of Excellence, the University of Tennessee System
- **July 2001 – June 2002**: Chairman, Center for Laser Applications, a Center of Excellence of the University of Tennessee System
- **December 1999 - 2005**: Member of the Governing Council for Center for Laser Applications, a Center of Excellence of the University of Tennessee System.
- **August 1997- January 1999**: *Associate Professor of Materials Science and Engineering*, The University of Tennessee, Space Institute.
- **September 1988 - August 1997**: *Research Assistant Professor of Materials Science and Engineering*, The University of Tennessee, Space Institute.
- **August 1987 - August 1988**: *Post-Doctoral Fellow and Instructor*, Materials Department, University of Wisconsin-Milwaukee (UWM).
- **January 1981 - June 1986**: *Graduate Teaching Assistant*, Department of Metallurgy Mechanics and Materials Science, Michigan State University. Involved in teaching laboratory exercises in following subjects.
- **September 1983 - June 1987**: *Graduate Research Assistant*, Division of Engineering Research, Michigan State University.

LEADERSHIP EXPERIENCE / ROLES

- Founding leader of **Virtual Center for Advanced Orthopaedics (VCAO)**. VCAO is international academic/industrial members based center collaborating on R&D and implementation of science/technology in orthopaedics (2015).
- Founding **Editor-in-Chief**, **International Journal of Additive and Subtractive Materials Manufacturing**, refereed technical journal, Inderscience Publishers, 2015-Present.
- **Chairman**, Department of Materials Science and Engineering, University of North Texas (2010-2013).
- **Chair** (2001-2002) and **Vice Chair** (2002-2003) of the **Center for Laser Applications (CLA)**, a Center of Excellence of the University of Tennessee System
- Founding leader of **Joint Center for Advanced Photonic Processing (JCAPP)** between the University of Tennessee and Oak Ridge National Laboratory that eventually culminated into establishment of **Manufacturing Demonstration Facility (MDF)** (2006).
- Founding **Chairman** (1998 – 2001, 2001-2003), and **Co-Chairman** (2003 - 2009), **Surface Engineering**

Committee, under Materials Processing and Manufacturing Division (MPMD) at the Minerals, Metals and Materials Society (TMS) of AIME.

- Led the creation and setting up **Metallurgical Engineering Program (MET-E)** offering **M.S. and Ph.D. degrees** at the University of Tennessee Space Institute (UTSI) starting from Fall 1996.

RESEARCH PROJECTS

Currently Under Review:

- Collaborative Research: Hierarchical Surface Modification of Metallic-Glass Coated Orthopedic Implants for Improved Osseointegration”, NSF, \$386,523, pending.
- “MRI: Acquisition of a Selective Laser Melting (SLM) Equipment for Advanced Multi-Dimensional Additive Manufacturing/Fabrication of Free Standing Components”, NSF, \$610,584.
- “Fundamentals of Laser Surface Engineering for Improving Coating Adhesion to Metal Alloy Surfaces”, DOD, \$2,074,562, pre-proposal approved for submission of full proposal.
- “Engineering an Intelligent Laser Shaping System for Hard Biological Tissue”, Australian Research Council, A\$2,000,000.
- “Laser Thermal Treatment of Metallic Glass Based Magnetic Materials”, NSF, \$394,168, pending.
- “Laser Assisted High Entropy Coatings on Light Weight Materials”, NSF, \$403,209, pending.

(Principal and Co-Principal Investigator, Total Funding of Over \$7M)

- Acquisition of a Laser System for Development of Hybrid Friction Stir Processing, Dept. of Navy, 2013.
- I/UCRC for Advanced Non-Ferrous Structural Alloys, NSF, July 2011-June 2016.
- Composite Surfacing of Amorphous Materials by Laser Interference Nanopatterning”, NSF, 2010- 2014.
- “Laser Assisted Rapid Surface Microstructuring of Alumina Ceramic”, NSF, August 2008 – July 2013.
- “Post-yield Behavior vs. Bone Quality”, NIH/UTSA, November 2009 – July 2013.
- “Development and Testing of Laser Assisted Repetitive Pressure-pulsed Apparatus for Generation of Controllable Cavitation in Metallic Targets Immersed in Water”, LDRD, ORNL, Oct. 2007-Sept. 2008.
- “Laser Surface Engineering of Complex Cutting Profiles for Enhanced Performance”, Lenox Saw, January 2007 – August 2008.
- “High Speed Laser Synthesis of Amorphous Surface Structures” NSF International Program, 2004-2008.
- “High Energy Density Processing of Materials” Joint Faculty Contract, UT-Battelle, 2002-2007.
- “Laser Interference Direct Structuring of Zirconia for Dental Materials”, LDRD, ORNL, June 2006-Sept. 2007.
- “Analytical Analysis of Physical Phenomena in Casting and Laser Processing”, ORNL (UT-Battelle), August 2005-December 2006.
- “Development of Advanced Surface Enhancement Technology for Decreasing Wear and Corrosion of Equipment used for Mineral Processing”, DOE, Oct.03 – Sept. 06.
- “Laser Induced Surface Improvement Applications”, Arnold Engineering Development Center, U.S. Air Force, July 01 – July 06.
- “Laser Based Coatings for Wear and Friction” Caterpillar, Inc., March 2002-December 2003.
- “Laser-Induced Surface Improvement” U.S. Air Force, Department of Defense, August 2002-October 2007.
- “High Energy Density Surface Modification of Die Casting Dies” Oak Ridge National Lab., One M.S. student support August 2001-July 2003.
- “High Energy Density Coating of High Temperature Advanced Materials for Energy Efficient Performance”, U.S. Department of Energy, October 2001- December 2003.
- “Laser Processing of Aluminum Engine Blocks”, URP Grant, Ford Motor Company, May 1999-Dec. 2003.
- “Laser Surface Heat Treatment of Steel”, Pacific Northwest National Laboratory, Department of Energy, Richland, Washington, December 1998-January 15 2002.
- “Laser Induced Reaction Joining of Ceramic to Ceramic or Metal”, HIP Grant, American Honda Motor Company Inc., October 1998-August 2000.
- “Laser Surface Heat Treatment of Tool Steel”, Pacific Northwest National Laboratory (PNNL), DOE, Richland, WA, December 1998-July 1999.
- “Laser Induced Surface Modification of Aluminum Alloys and Mold Steels”, Aluminum Company of America (ALCOA), Pittsburgh, PA, August 1998-June 1999.
- “Laser Induced Surface Modification of Aluminum Alloys for Engine Applications”, Grant, Ford Motor Company, January 1998-December 1999.

- "Laser Induced Surface Modification of Aluminum Alloys", Aluminum Company of America (ALCOA), Pittsburgh, PA, January 1997-December 1998.
- "Evaluation and Design of Heat Treatments of Advanced Aluminum Alloys for High Impact Applications"" WORTH Inc., Tullahoma, TN, 1994-98 Industrial Fellowship to Mr. Robert Herron, a Ph.D. student under the guidance of Dr. Dahotre as major professor.
- "Innovative Manufacturing Processes for Coated Conductors: Evaluation of Non-vacuum Processes for Epitaxial Buffer Layers", U.S. Department of Energy (DOE), March 1997-August 1998.
- "Ultrahard Coatings on Metals", funded by US Air Force, DoD through a SBIR Phase-II contract with Materials Modification, Inc., Fairfax, VA, Jan 97-March 2000.
- "Laser Surface Alloying for Rust Elimination", US Air Force, November 1996 - October 1997.
- "Acquisition of an Ultra-High Speed Diagnostics System", NSF, September 1995 - August 1997.
- "Structure Modification of Lead Alloy Grids Using Non-Contact Energy Sources", Johnson Controls Inc., Milwaukee, WI, April 1995-June 1996.
- "Laser Surface Treatment of Ni-based Alloys for Effective Joining by HIPing", funded by Babcock & Wilcox, Lynchburg, VA, January - June 1996.
- "Ultrahard Coatings on Metals", funded by Air Force, DoD through a SBIR Phase-I contract with Materials Modification, Inc., Fairfax, VA, Oct. 94-March 1995.
- "Plasma Synthesis of Nano-Tungsten Powders", funded by Army Research Office through a contract with Materials Modifications, Inc., for October 1994 -March 1996.
- "Development and Analysis of Coatings on Ceramics for High Temperature Corrosion Resistance in Heat Exchanger Application - High Performance Materials in Coal Conversion Utilization ", U. S. Department of Energy (DOE), October 1994-September 1997.
- "Thick Film Metallization on Graphite for High Temperature Furnace Joints", funded by NASA through a subcontract with Oryx Technology Corp., Fremont, CA, 1994-96.
- "Active Metal Joining of Thermoplastic Matrix Composites", funded by DoD through a subcontract with Oryx Technology Corp., Fremont, CA, Jan.-Dec. 1994.
- "Reliable Furnace Joints for Gas Grain Simulation Facility", funded by NASA through a subcontract with Oryx Technology Corp., Fremont, CA, Jan.-Dec. 1994.
- "Oxidation Resistant Coatings for Carbon-Carbon Composites", funded by NASA through a subcontract with Oryx Technology Corp., Fremont, CA, Jan.-Dec. 1994.
- "Analytical Microscopic Analysis of Copper Bonded to Graphite", funded by NASA through a subcontract with Advanced Technology, Inc., San Jose, CA, for April - June 1993.
- "Analytical Microscopic Analysis of Interfacial Microstructure in Metallized CVD Grown Diamond", funded by Advanced Technology, Inc., San Jose, CA, for Oct. – Dec. 1992.
- "Study of Interfacial Reaction Microstructure in Carbon-Carbon Fiber Composite Joined Using Intragene Process", funded by Advanced Technology, Inc., San Jose, CA, for October - December 1992.
- "Laser Welding of Inconel 718" funded by NASA, Huntsville, Alabama for 1990-91.
- "Improved Lead Alloy Grids by Laser Treatment" funded by Inter. Lead Zinc Research Org. for 1990-91. Resulted in a US Patent # 4,978,601, Dec. 18, 1990, "Lead Alloy Battery Grids by Laser Treatment", Assigned to ILZRO, Research Triangle Park, North Carolina.

AWARDS/HONORS

- 2016 University of North Texas Foundation Faculty Leadership Award.
- **2013 The Metallurgical and Materials Society (TMS) – Materials Processing and Manufacturing Division (MPMD) Distinguished Engineer/Scientist Award.**
- **Visiting Professor**, Northwestern Polytechnical University, Xi'an, Shaanxi, P.R. China, 2016.
- **Adjunct Professor**, Curtin University, Perth, Australia, 2015.
- **Endowed Professor Brahm Prakash Visiting Chair**, Department of Materials Engineering, Indian Institute of Science, Bangalore, India, 2013.
- **Honorary Guest Professor**, Shandong University, Jinan, P.R. China, 2012-2015.

- Honorary Advisor of Research, Narayana Medical College and Hospital and Narayana Institutions, Nellore, India, July 2012-Present.
- Fellow of the following organizations :
 - American Institute of Medical and Biological Engineering (AIMBE) (2016)
 - World Innovation Foundation (WIF) (2014).
 - National Academy of Inventors (NAI) (2013).
 - Materials Research Society-India (MRSI) (2011).
 - Society of Manufacturing Engineers (SME) (2010).
 - American Association of Advancement of Science (AAAS) (2009).
 - Indian Institute of Metals (IIM) (2009).
 - American Society of Mechanical Engineers (ASME) (2008).
 - American Society for Materials (ASM) International (2004).
- **2008 Faculty Award for Excellence in Service**, Department of Materials Science and Engineering, The University of Tennessee.
- The University of Tennessee Chancellor's **2006 Research and Creativity Achievement Award**
- The University of Tennessee College of Engineering **2006 Research Fellow Award**
- **University of Tennessee Vice President's Award for Research Excellence**, 1997. Cited for research work in the area of Laser Induced Reaction Processing of Advanced Materials.
- **American HONDA Motor Company R&D Research Award**, 2000-2001.
- **2000 ASM-IIM (American Society for Materials International – Indian Institute of Metal) Visiting Lecturer Award**, April 26, 2000, to present an invited technical talks at the ASM chapters in India.
- **American HONDA Motor Company R&D Research Award**, 1998-99.
- **Ford Foundation Research Award**, 1998-99.
- **ALCOA Foundation Research Award**, 1997-98.
- **1998 American Museum of Science and Energy (AMSE'98) Award**, Department of Energy, Oak Ridge, TN. Cited for Technological Achievement: Laser Induced Surface Improvement.
- **Visiting Senior Research Fellow** in Photon Process Section of Optoelectronic Division at the Electrotechnical Laboratory, Tsukuba, Japan under the Agency of Industrial Science and Technology Fellowship Program of Japanese Ministry of International Trade and Industry. The topic of research: Laser Processing of Coatings for Space Applications, 1996.
- **2000 Outstanding Alumni, College of Engineering, University of Poona**, Pune India. Cited for the work in Laser Materials Processing.
- **Honorary Technical Consultant to Asean Tribology Center**, Manila, Philippines, February 1996-Todate.
- **Member of the Board of Technical Advisors, Center for Laser Processing of Materials**, NFTDC, Department of Science & Technology, Government of India, Hyderabad, India, February 1997-Todate.
- **2010 Best Poster (First Place) in Graduate Division Poster Contest**, Biological Materials Science TMS Annual meeting, Seattle, Washington, Feb. 2010
- **2008 2nd Best Poster**, Student Poster Night, ASM International Oak Ridge Chapter.
- **2007 2nd Best Poster**, Student Poster Night, ASM International Oak Ridge Chapter.

- **2006 R&D 100 Award**, Metal Infusion Surface Treatment (MIST), Jointly with a team from ORNL and industrial partners
- 1st place in the 2005 **The Mineral, Metals and Materials Society (TMS)** Outstanding Paper Contest, Graduate Division.
- 2nd place in the 2003 **The Mineral, Metals and Materials Society (TMS)** Outstanding Paper Contest, Graduate Division.

UNIVERSITY SERVICE

- 2015, Member, Search Committee for Associate Vice President of Economic Development, University of North Texas.
- 2014-Present, Member, Chair Search Committee, Department of Materials Science & Engineering, University of North Texas
- 2011-13, College of Engineering Member, University of North Texas Chairs Council.
- 2011-12, Chair, **Tenure Track Faculty (2) Search Committee**, Multiscale Surface Engineering & Science Research Cluster, University of North Texas
- 2010-12, Co-Chair, **Tenure Track Faculty (4) Search Committee**, Materials Science & Engineering, University of North Texas
- 2010-2011, Member, **Chair for Computer Science & Engineering Search Committee**, University of North Texas
- 2010-2011, Member, **Nanofabrication (Cleanroom) Facilities Manager Search Committee**, University of North Texas
- 2010-2011, Member, **Nano/Bio Photonic Cluster Faculty Search Committee**, University of North Texas.
- Fall 2008-2009, Chairman, **Accreditation Committee**, Department of Materials Science & Engineering, University of Tennessee-Knoxville (UTK).
- Fall 2007-Spring 2008, Coordinator, Ten-Year **Academic Program Review**, Department of Materials Science & Engineering, UTK.
- Fall 2006-2009, Chairman, **Promotion and Tenure Committee**, Department of Materials Science & Engineering, UTK.
- Fall 2000-2009, Member, **Graduate Student Affairs Committee**, Department of Materials Science & Engineering, UTK.
- 2006-2008, Member, **Tenure Track and Research Faculty Search Committee**, Materials Science & Engineering, UT Space Institute
- Fall 2006 semester, Coordinator, MSE 503, **Graduate Seminar**
- 2005-2009, Member, the **Bylaws Committee**, College of Engineering University of Tennessee, College of Engineering.
- 2001-2002, Member, the **University of Tennessee Faculty Senate International Education Committee**
- 1999-2002, Member, the **Students Affairs Committee**, UT Space Institute
- 1999-2002, **Senator**, the **Faculty Senate**, UT Space Institute.

- 1997-1999, Member, the **Library Committee**, UT Space Institute

PROFESSIONAL ASSOCIATION / SERVICE

- Member of the Metallurgical Society (TMS) of AIME, ASM International, Society for Manufacturing Engineers (SME), American Association of Advancement of Science (AAAS), American Society of Mechanical Engineers (ASME), American Ceramic Society (ACerS), Laser Institute of America (LIA)
- **Founding Chairman (1998 – 2001, 2001-2003), and Co-Chairman (2003 - 2009), Surface Engineering Committee**, under Materials Processing and Manufacturing Division (MPMD) at the Minerals, Metals and Materials Society (TMS) of AIME.
- **Member** of the **ASM Surface Engineering Task Force** responsible for organizing **1st International Surface Engineering Congress in 2002** and **2nd International Surface Engineering Congress in 2003** and **3rd International Surface Engineering Congress held in 2002** in synergy with ASM affiliate societies of Thermal Spray and Heat Treatment.
- **Member** of the **Electronic Committee**, of the Minerals, Metals and Materials Society (TMS), Warrendale, PA, 1999-Present.
- **Member (1998-2001)**, Materials Processing & Manufacturing Division (MPMD) Council, The Minerals, Metals and Materials Society (TMS) of AIME.
- **Member (1998-2001)**, Technical Programming Board, ASM International, Materials Park, Ohio.
- **Chairman (1999-2000)**, Surface Engineering Sector, American Society for Materials (ASM) International
- **Founding Vice-Chairman (1997-1999)**, Surface Engineering Sector, American Society for Materials (ASM) International
- Member and Education Coordinator of **Surface Modification and Coatings Technologies (SMACT)** Committee under Materials Design and Manufacturing Division (MDMD) at the Metallurgical Society (TMS) of AIME, 1992-97.
- Member of **International Editorial Board**, 1992-94, **Industrial Laser Handbook**, Springer-Verlag, New York, New York.

EDITORIAL BOARD

- **Editor-in-Chief, International Journal of Additive and Subtractive Materials Manufacturing**, Inderscience Publishers, 2015-Present.
- **Editor, Optics and Laser Technology**, Elsevier, 2016-Present.
- **Member**, Editorial Board, the **Scientific Pages of Orthopaedics and Rheumatism**, the Scientific Pages, 2016-Present.
- **Member**, Editorial Board, **Ceramics**, MDPI AG, Switzerland, 2016-Present.
- **Member**, Editorial Board, **ARC Journal of Surgery**, ARC Publications, India, 2016-Present.
- **Member**, Editorial Board, the **Journal of Materials & Applied Science**, JSciMed Central, 2016-Present.
- **Associate Editor, Journal Materials Engineering Performance**, a monthly technical refereed journal by Springer and ASM International, 2006-2014.
- **Member**, Editorial Board, **Lasers in Manufacturing and Materials Processing**, a monthly technical

refereed journal by Springer, 2014-Present.

- **Member**, Editorial Board, ***Journal of Photonics***, a monthly technical refereed journal by Hindawi Publishing, 2012-Present.
- **Member**, Editorial Board, ***Materials Technology: Advanced Performance Materials***, a monthly technical refereed journal by Institute of Materials (IoM), UK, 2012-Present.
- **Member**, Editorial Board, ***Journal of Nanoscience***, a monthly technical refereed journal by Oretic International Publishers, 2012-Present.
- **Member**, Editorial Board, ***Nanomaterials and Energy***, a monthly technical refereed journal by Institution of Civil Engineers (ICE) Publishing, 2011-Present.
- **Member, Editorial Board, *Journal of Mechanical Engineering***, a monthly technical refereed journal by University of Ljubljana, University of Maribor, Association of Mechanical Engineers of Slovenia, Chamber of Commerce and Industry of Slovenia, and Metal Processing Industry Association, 2009-2014.
- **Member**, Editorial Board, ***International Journal of Microstructure and Materials Properties***, a quarterly technical refereed journal by Interscience, 2004-Present.
- **Member**, International Advisory Board, ***Advanced Engineering Materials***, a monthly technical refereed journal by Wiley-VCH, January 2001-2013.

SYMPOSIUM ORGANIZATION

1. Conducted a TEQIP sponsored workshop on ***“Laser Micro-processing for Biomedical Applications”*** at the Department of Production Engineering, National Institute of Technology, Tiruchy, India; April 3, 2014.
2. **Co-Organizer**, symposium, ***“Surface Engineering for Amorphous-,Nanocrystalline-, and Bio-materials”*** TMS 2010 Annual Meeting, February 14-18, 2010, Seattle, WA.
3. **Co-Organizer**, symposium, ***“Surface Structures at Multiple Length Scales”*** TMS 2009 Annual Meeting, February 15-19, 2009, San Francisco, CA.
4. **Co-Organizer**, symposium, ***“Surfaces and Interfaces in Nanostructured Materials-II”*** held during TMS Annual Meeting (13-16 March, 2006) at San Antonio, TX.
5. **Co-Organizer**, symposium, ***“Coatings-2005”*** held during ASM, ACerS, AIST, AWS and TMS Fall Materials Science & Technology 2005 (MS&T’05) Conference, 25-28 September 2005, Pittsburgh, PA.
6. **Co-Organizer**, symposium, ***“Surface Engineering: In Materials Science-III”*** held during TMS Annual Meeting (13-17 February, 2005) at San Francisco, CA.
7. **Co-Organizer, 3rd International Surface Engineering Congress**, ASM, August 2-4, 2004, Orlando, FL.
8. **Co-Organizer**, symposium, ***“Surfaces and Interfaces in Nanostructured Materials”*** TMS Annual Meeting (14-18 March, 2004), Charlotte, North Carolina.
9. **Co-Organizer, 2nd International Surface Engineering Congress**, ASM International, September 15-17, 2003, Indianapolis, Indiana.
10. Serving as **Program Chair, Coordinator for the topic Surface Engineering and Coating, Member of International Advisory Committee, Member of Publication Committee and In-Country (USA, Canada and South America) Executive Representative** for **THERMEC’2003**, Madrid, Spain, July 7-11, 2003.
11. **Co-Organizer**, symposium, ***“Surface Engineering: In Materials Science-II”*** held during TMS Annual Meeting, 2-6 March, 2003, at San Diego, CA.

12. **Co-Organizer, 1st International Surface Engineering Congress**, held during ASM Materials Solutions 2002, October 7-10, 2002, Columbus, Ohio.
13. **Principal Organizer**, symposium, "**High Temperature Coatings IV**" held during 2001 TMS Annual Meeting, Feb. 11-15, 2001, at New Orleans, Louisiana.
14. **Principal Organizer**, symposium, "**Surface Engineering**" held during ASM Materials Solutions 2000, October 9-12, 2000 at St. Louis, Missouri.
15. **Co-Organizer**, symposium, "**Surface Engineering: In Materials Science-I**" held during TMS Annual Meeting, 12-16 March, 2000, at Nashville, Tennessee.
16. **Co-Organizer**, symposium, "**High Temperature Coatings III**" held during TMS Annual Meeting, February 28-March 3, 1999, at San Diego, CA..
17. **Principal Organizer**, symposium, "**High Temperature Coatings II**" held during TMS Annual Meeting, February 4-8, 1996, at Anaheim, California.
18. **Principal Organizer**, symposium, "**High Temperature Coatings I**" held during 1994 TMS Fall Meeting, Oct. 3-6, 1994, at Rosemont, Illinois.

INVITATIONS

1. Invited presentation, "Laser Surface Engineering for Biomedical Applications", **Department of Physics & Astronomy, School of Science & Engineering, Curtin University**, Kent Street, Bentley, WA, 6102, Australia, December 2, 2016
2. Invited presentation, "Laser Assisted Periodic Crystallization of Metallic Glass for Enhanced Magnetic Performance", **Department of Mechanical Engineering, Iowa State University, Ames, IA**, October 21, 2015.
3. Key note presentation, "Laser Assisted Periodic Crystallization of Metallic Glass for Enhanced Magnetic Performance", **Int. Conf. on Application of Lasers in Manufacturing (CALM 2015)**, Sept. 9-11, 2015, New Delhi, India.
4. Plenary talk, "Laser Surface Engineering", **3rd International Conference on Laser and Plasma Applications in Materials Science**, Jan. 15-17, 2015, Kolkata, India
5. Plenary talk, "Laser Surface Engineering", the **2nd International Conference on Metallic Materials and Processing, Joint US-China Workshop on Materials Research and Education**, Sep. 29-Oct. 3, 2014, Las Vegas, NV, USA
6. Invited Presentation, "Laser Assisted Crystallization of Ferromagnetic Amorphous Ribbons", Department of Materials Science and Engineering, **Indian Institute of Technology-Bombay**, India, April 8, 2014.
7. Invited Presentation, "Laser Assisted Crystallization of Ferromagnetic Amorphous Ribbons", **International Advanced Research Center for Powder Metallurgy and New Materials**, Department of Science & Technology, Government of India, Hyderabad, India, April 4, 2014.
8. Invited Presentation, "Laser Textured Bio-Ceramic Coatings for Hard Tissue Implants", **Indian Institute of Technology-Madras**, Chennai, April 2, 2014
9. Invited Presentation, "Evolution of Surface Topography During Laser Machining of Structural Ceramic", **Indian Institute of Technology-Madras**, Chennai, April 1, 2014.
10. Invited Presentation, "Integrated Computational and Experimental Approach to Laser Surface Alloying of

- Molybdenum on Aluminum”, **Indian Institute of Science**, Bangalore, March 26, 2014.
11. Invited Presentation, “Evolution of Surface Topography During Laser Machining of Structural Ceramic”, **Indian Institute of Science**, Bangalore, March 19, 2014.
 12. Invited Presentation, “Laser Assisted Crystallization of Ferromagnetic Amorphous Ribbons”, **Indian Institute of Science**, Bangalore, March 11, 2014.
 13. Invited Presentation, “Evolution of Surface Topography in Laser Machining of Structural Alumina: An Integrated Experimental and Computational Approach, Innovative Processing and Synthesis of Ceramics, Glasses and Composites, **Materials Science & Technology (MS&T’13)** October 27-31, 2013, Montreal, Canada.
 14. Invited presentation, “Laser Textured Bio Ceramic Coatings for Hard Tissue Implants”, Department of Mechanical Engineering, **Southern Methodist University**, Dallas, Texas, April 19, 2013.
 15. Invited presentation, “Laser Textured Bio Ceramic Coatings for Hard Tissue Implants”, **International Conference on Design of Biomaterials (BIND’12)**, December 9-12, 2012, Bangalore, India.
 16. Invited presentation, “Laser Textured Bio Ceramic Coatings for Hard Tissue Implants”, **Bioactive Coatings, Materials Science & Technology (MS&T’12)** October 7-12, 2012, Pittsburgh, Pennsylvania.
 17. Invited presentation, “Laser Deposition of Bioactive Glasses on Titanium Alloys”, **36th International Conference & Exposition on Advanced Ceramics & Composites (ICACC)**, American Ceramic Society, Daytona Beach, Florida, January 22-27, 2012.
 18. Invited presentation, “Laser Textured Bio Ceramic Coatings for Hard Tissue Implants”, **CINVESTAV, Queretaro, Mexico**, November 3, 2011.
 19. “Laser Surface Alloying of a Creep Resistant Magnesium Alloy MRI 230D with Al and Al₂O₃”, **Magnesium Technology 2010, TMS 2010 Annual Conference**, February 14-18, 2010 – Seattle, Washington
 20. Invited presentation, “Laser Surface Engineering”, **ASM International Pune Chapter, Pune, India**, December 11, 2008.
 21. Invited presentation, “Laser Surface Engineering: Laser Induced Reaction Coating for Automotive Application”, Symposium on **Materials and Processes** in Ground Vehicle Transportation, MS&T’07, September 17-20, 2007, Detroit, MI.
 22. Invited presentation, “Laser Surface Engineering of Alumina Ceramic”, Narendra B. Dahotre at the **Center for Laser Processing of Materials**, International Advanced Research Center for Powder Metallurgy and New Materials, Department of Science & Technology, Government of India, Hyderabad, India, December, 12, 2006.
 23. Invited presentation, “Novel Photonic Processing—from Biomimetic Micro-structures to Large Area Treatments”, C. Daniel, N. B. Dahotre, R. Ott, **German Engineering Society** (Verband Deutscher Ingenieure), St. Ingbert/Saar, Germany, November 2, 2006
 24. Invited presentation, “Laser Surface Engineering”, at the **National Metallurgical Laboratory**, Jamshedpur, India, December, 9, 2005.
 25. Invited presentation, “Laser Surface Engineering: Laser Induced Reaction Coating for Automotive Application”, at the **Department of Metallurgy, Pune Institute of Engineering and Technology, University of Pune**, Pune, India, December, 18, 2004.
 26. Invited presentation, “Laser Surface Engineering: Laser Coating of Ceramic on Aluminum”, at the Department of Metallurgical and Materials Engineering, **Indian Institute of Technology (IIT)**, Kharagpur, India, December 22, 2004.

27. Invited presentation, "Laser Surface Engineering", during the Golden Jubilee **Department of Atomic Energy (DAE), Government of India**, National Laser Symposium, December 22-24, 2003, Indian Institute of Technology (IIT) Kharagpur, India.
28. Invited presentation, "Nanocoating for Engine Application", **International Conference on Metallurgical Coating and Thin Film (ICMCTF)**, San Diego, April 29, 2003.
29. Invited presentation, "State of the Residual Stress In Laser Surface Engineered Composite Coating on Al", Department of Applied Physics, **University of Groningen**, The Netherlands, November 7, 2002.
30. Invited to serve on the **Proposal Evaluation Panel** for the Fundamental Research on Matter (FOM) Program jointly by **Stichting voor Fundamenteel Onderzoek der Materie and Netherlands Institute of Metal Research**, Utrecht, The Netherlands, November 4-5, 2002.
31. Invited presentation, "Laser Surface Engineering", **Aditya Birla Group of Companies**, Bombay, India, July 30, 2002.
32. Invited presentation, "Laser Surface Engineering", Center for Laser Processing of Materials, Advanced Research Center, **Department of Science and Technology, Government of India**, Hyderabad, India, July 25, 2002.
33. Invited presentation, "Functionality of Laser Surface Engineered Boride Coating on Steel" at Department of Mechanical Engineering, College of Engineering, **University of Arkansas-Fayetteville, AR**, January 20, 2002.
34. Invited presentation, "Manufacturing Research Opportunities in University Environment", at the **College of Engineering, Tennessee Technological University (TTU)**, Cookeville, TN, July 13, 2001.
35. Invited presentation, "Functionality of Laser Surface Engineered TiB₂ Coating on Steel", at the **TATA Research, Design and Development Center (TRDDC)**, Pune, India, December 4, 2000.
36. Invited presentation, "Functionality of Laser Surface Engineered TiB₂ Coating on Steel", at the **Bhaba Atomic Research Center (BARC), Department of Atomic Energy, Gov. of India**, Bombay, India, November 24, 2000.
37. Invited presentation, "Oxidation Kinetics and Morphology of Laser Surface Engineered Hard Coating on Aluminum" during the **International Conference on Corrosion (CORCON 2000) of NACE** held on 20-23 Nov. 2000, Bombay, India.
38. Invited presentation, "Laser Surface Engineered Hard Coating on Aluminum", at the **2000 Global Powertrain Congress**, Detroit, MI, June 6-8, 2000.
39. Invited presentation, " Laser Engineered Composite Boride Coating on Steel for Elevated Temperature Oxidation of Surface Oxidation Protection", at the Center for Laser Processing of Materials (CLPM), **Department of Science & Technology, Government of India**, Hyderabad, India, November 30, 1999.
40. Invited presentation, "Pulse Electrode Deposition of TiB₂ on Steel for Surface Oxidation Protection", at the Center for Laser Processing of Materials (CLPM), **Department of Science & Technology, Government of India**, Hyderabad, India, November 29, 1999.
41. Invited presentation, "Elevated Temperature Oxidation of Laser Engineered Composite Boride Coating on Steel" during the **International Conference on Corrosion (CORCON'97) of NACE** held on 22-24 Nov. 1999, New Delhi, India.
42. Invited presentation, "High Energy Density Deposition of Ceramic Coatings!" during the **IV'th International Congress on Energy, Environment & Technological Innovations**, 20-24 Sept. 1999, Rome, Italy.

43. Invited speaker at the **45th Anniversary of the Faculty of Engineering Symposium, Central University of Venezuela, Caracas, Venezuela**, sponsored by National Science Foundation, November 16-20, 1998. Title of the talk, "High Energy Density Deposition of Ultrahard Boride Coatings".
44. Invited to serve on the **International Advisory Committee** of the **12th International Conference on Surface Modification Technologies (SMT-12)** held in Rosemont, Illinois, October 12-16, 1998.
45. Invited to serve on the **International Advisory Committee** of topical Symposium of the forum, "Surface Engineering" the 9th CIMTEC-World Ceramics Congress & Forum on New Materials held in Florence, Italy, June 1998.
46. Presented an invited talk on "Laser Induced Reaction Synthesis of Protective Surface Oxide Coating", at Joint Seminar of Metallurgical and Polymer Engineering, **the Department of Materials Science & Engineering, University of Tennessee**, Knoxville, TN, March 3, 1998.
47. Invited presentation, "Lasers in Materials Processing: Coating a Joining of Advanced Materials", at the **School of Physical Sciences, North Maharashtra University**, Jalgaon, India, December 27, 1997.
48. Invited presentation, "Laser Induced Reaction Coating: An Innovative Technique for Synthesis of Protective Surface Oxide Coating", at the Center for Laser Processing of Materials (CLPM), **Department of Science & Technology, Government of India**, Hyderabad, India, December 23, 1997.
49. Invited presentation, "Laser Induced Reaction Coating of ceramic on Ceramic Composite for Enhanced High temperature Corrosion Resistance" during the **International Conference on Corrosion (CORCON'97) of NACE** held on 3-6 Dec. 1997, Bombay, India.
50. Invited to chair a session and present an Invited talk entitled, "Ultra Hard Coatings on Metals: Evolution of Microstructure and Mechanical Properties" during **11th International Conference on Surface Modification Technologies (SMT-11)** held on 8-10 September, 1997, Paris, France.
51. Invited presentation, "Advanced Materials Processing by Novel and Non-Traditional Techniques" as a Guest Speaker at the **Society of Manufacturing Engineers (SME) Chapter S-239, Department of Engineering Technology, Middle Tennessee State University**, Murfreesboro, TN, October 26, 1996.
52. Invited presentation, "Laser Induced Reaction Processing of Advanced Materials: A Research Overview", at the **Institute of Materials, East Asia, Nanyang Technological University**, Singapore, Sept.6, 1996.
53. Invited presentation, "Laser Induced Reaction Coating of Ceramic on Ceramic Composite", at the **Department of Mechanical Engineering, University of Miami, Coral Gables, Florida**, Feb. 26, 1996.
54. Invited presentation, "Laser Joining of Metal Matrix Composite – A Research Overview", at the **Department of Mechanical & Industrial Engineering, University of Illinois at Urbana-Champaign, Illinois**, February 23, 1995.
55. Invited presentation, "Laser Joining of Metal Matrix Composite", at the **Department of Physics, Alabama A&M University**, Normal, Alabama, March 24, 1994.
56. Invited presentation, "Joining of Metal Matrix Composites" at the 16th Annual **Metal Matrix Composites Working Group Meeting**, held at Park City, Utah on 1-2 Feb. 1994. The meeting was organized by DoD Metal Matrix Composites Information Analysis Center, CINDAS/Purdue University.
57. Invited presentation, "Laser Joining of Metal Matrix Composite", at the **Center for Advanced Studies in Materials Science and Solid State Physics, Department of Physics, University of Poona**, Pune, India, June 7, 1993.
58. Invited presentation, "Laser Joining of Metal Matrix Composite", at the **American Society for Materials Intl. Symposium on Machining of Composite Materials** held in Chicago, IL, on November 2-5, 1992.

TECHNICAL SESSION CHAIR

1. Session Chair, "Joining, Cutting, Drilling, and Machining with Lasers", **Int. Conf. on Application of Lasers in Manufacturing (CALM 2015)**, Sept. 9-11, 2015, New Delhi, India.
2. Session Chair, "Functional Coatings II", **Advances in Surface Engineering: Alloyed and Composite Coatings II**, TMS 2013 Annual Meeting March 3-7, 2013, San Antonio, Texas.
3. Session Chair, "Surface Properties of Biomaterials III", **Bioactive Coatings, Materials Science & Technology (MS&T'12)** October 7-12, 2012, Pittsburgh, Pennsylvania.
4. Session Chair, "Surface Structures at Multiple Length Scales: Bio Coatings and Nanoscale Characterization" **TMS 2009 Annual Meeting**, February 15-19, 2009, San Francisco, CA.
5. Session Chair, "Processing, Properties, and Performance of Composite Materials", **Processing & Product Manufacturing**, MS&T'08, October 5-9, 2008, Pittsburgh, PA.
6. Session Chair, "Nanostructured Metals and Oxides", **Surfaces and Interfaces in Nanostructured Materials held** during TMS Annual Meeting, 13-16 March, 2006, San Antonio, TX.
7. Session Chair, "Oxidation/Environmental Barrier Coatings I", **Coatings 2005** held during ASM, ACerS, AIST, AWS and TMS Fall Materials Science & Technology 2005 (MS&T'05) Conference, 25-28 September 2005, Pittsburgh, PA.
8. Session Chair, "Hard Coatings II", **Coatings 2005** held during ASM, ACerS, AIST, AWS and TMS Fall Materials Science & Technology 2005 (MS&T'05) Conference, 25-28 September 2005, Pittsburgh, PA.
9. Session Chair, "Laser Processing for Surface Modification", **Surface Engineering: In Materials Science-III** held during TMS Annual Meeting, 13-17 February, 2005, San Francisco, CA.
10. Session Chair, "Coatings and Surface Modification", **Surfaces and Interfaces in Nanostructured Materials**, TMS Annual Meeting, 14-18 March, 2004, Charlotte, North Carolina.
11. Session Chair, "Surface Engineering/ Coatings", **THERMEC'2003**, International Conference on Processing & Manufacturing of Advanced Materials, July 7-11, 2003, Madrid, Spain.
12. Session Chair, "Laser Processes" **2nd International Surface Engineering Congress**, Indianapolis, Indiana, September 15-17, 2003 in conjunction with the Heat Treat 2003 and North American Die Casting Association Congress.
13. Session Chair, "Surface Engineering and Modification", **Surface Engineering in Materials Science – II**, 132nd TMS Annual Meeting, San Diego, CA, March 2-6, 2003.
14. Session Chair, "Laser Processes" **1st International Surface Engineering Congress (ISEC)** in conjunction with the 13th International Federation for Heat Treatment and Surface Engineering Congress (IFHTSEC), October 7-10, 2002, Columbus, Ohio.
15. Chaired the session on "Ceramic Coatings" during the symposium on **High Temperature Coatings-IV (HTC-IV'o1)**, New Orleans, LA, Feb. 12–15, 2001.
16. Chaired the session on "Coatings/Films Synthesis and Processes" during the symposium on **Surface Engineering in Materials Science-I**, Nashville, TN, March 12– 16, 2000.
17. Chaired the session on, "Elevated Temperature Oxidation/Corrosion" during the **International Conference on Corrosion (CORCON'97) of NACE**, 22-24 Nov. 1999, New Delhi, India.
18. Chaired the session on "Processing of Coatings" during the **Symposium on Progress in Surface**

Engineering Symposium, Cincinnati, Ohio, Nov. 1-4, 1999.

19. Chaired the session on "Coatings for Steels" during the symposium on **High Temperature Coatings-III (HTC-III'99)**, San Diego, CA, Feb. 28 – March 4, 1999.
20. Chaired the session on "Characterization of Coatings" during the **12th International Conf. on Surface Modification Technologies (SMT-12)** and **4th Surface Engineering Symposium**, Rosemont, Illinois, Oct. 12-16, 1998.
21. Chaired the session on "Characterization of Coatings" during the **3rd Surface Engineering Symposium**, Indianapolis, Indiana, on Sept. 15-18, 1997.
22. Chaired the session on, "Hard Coatings" during the **11th International Conf. on Surface Modification Technologies**, Paris, France on September 3-6, 1997.
23. Chaired the session on "Characterization of Coatings" during the **2nd Surface Engineering Symposium**, Cincinnati, Ohio, on Oct. 7-10, 1996.
24. Chaired the session on, "Application, Testing, Corrosion and Characterization of Coatings" during the **10th International Conf. on Surface Modification Technologies**, Singapore, on September 2-5, 1996.
25. Chaired the session on "Laser Processing" during the **9th International Conf. on Surface Modification Technologies**, Cleveland, Ohio, on Oct. 30 - Nov. 2, 1995.
26. Chaired the session on "Laser Surface Modification", during the **13th Int. Congress on Applications of Lasers and Electro-Optics**, Orlando on Oct. 17-19, 1994.
27. Chaired the session on, "Advanced Processes", during the **8th International Conf. on Surface Modification Technologies**, Nice, France, on September 26-28, 1994.
28. Chaired the session on, "Laser and Plasma Processes", during the **6th International Conf. on Surface Modification Technologies**, Chicago, on November 2-5, 1992.

M.S. Students – Major Advisor

- 1) **Medha Veligatla**, Master of Science, Graduated in Spring 2014
Thesis: Glass Forming Ability, Magnetic Properties and Mechanical Behavior of Iron and Cobalt Based Metallic Glasses
- 2) **Thomas Ho**, Materials Science, Graduated in Fall 2013
Thesis: Effect of Laser Surface Modification of AZ31B Mg Alloy for Bio-Wettability
- 3) **Abhinay Andapally**, Materials Science, Graduated in Fall 2012
- 4) **Marcos Moncayo**, Materials Science, Graduated in Fall 2012
Thesis: Laser Modified Alumina: A Computational and Experimental Analysis
- 5) **Abhijit Khangar**, Materials Science, Graduated in Summer 2004
Thesis: Laser Dressing of Alumina for Grinding Wheels
- 6) **Anshul Singh**, Materials Science, Graduated in Summer 2004
Thesis: Laser In-Situ Combinatorial Carbide Coating on Steel
- 7) **Greg Engleman**, Materials Science, Graduated Spring 2003
Thesis: A Computational Approach to Understanding a Material System: Infrared Coating of Ni-P on Steel
- 8) **Puja Kadolkar**, Materials Science, Graduated in Summer 2002
Thesis: Residual Stress and Cohesive Strength of TiC Composite Coating on Aluminum Alloys During Laser Surface Engineering
- 9) **Q. Shenghong**, Chemical Engineering, Graduated in Fall 2002
Thesis: Synthesis of Carbon Nanoparticles from Laser-Thermal Cracking of Methane Using Regenerable Iron-based Catalyst.
- 10) **Robert Herron**, Metallurgical Engineering, Graduated in Fall 2001
Thesis: Laser Induced Reaction Coating of Aluminum
- 11) **Swapnil Shah**, Materials Science, Graduated in Summer 2001
Thesis: Functionality of Laser Surface Engineered Ceramic Coating on Die/Tool Steel

- 12) **Lalitha Katipelli**, Materials Science, Graduated in Summer 2000
Thesis: Laser Surface Engineering of Titanium Carbide Composite Coatings on Alluminum Alloy
- 13) **James Intrater**, Metallurgical Engineering, Graduated in Fall 1998
Thesis: Materials and Materials Processing Issues in the Fabrication of a Discrete, High-Power, Surge-Arresting Device
- 14) **Jacquelinie West**, Engineering Science, Graduated in Spring 1996
Thesis: Effects and Control of Magnesium Loss During Laser Welding of Magnesium-Aluminum Alloy
- 15) **Robert Waldrop**, Engineering Science, Graduated in Spring 1995
Thesis: An Investigation of Laser Surface Modification by Deposition of Silicon onto Molybdenum
- 16) **Peter LaRue**, Mechanical Engineering, Graduated in Spring in 1995
Thesis: An Investigation of the Strength of a SiC/Al₂O₃ Ceramic Matrix Composite Exposed to Coal Slag at Elevated Temperatures
- 17) **Jay S. Murthy**, Engineering Science, Graduated in Fall 1994
Thesis: Investigation of the Drilling Dynamics and Melt Expulsion Mechanisms During the Laser Drilling of Ti-6Al-4V Using High Speed Photography

Ph.D. Students – Major Advisor

- 1) **Antin Dios Wu**, Materials Science, joined Spring 2014
- 2) **Sameehan Joshi**, Materials Science, joined Fall 2013.
- 3) **Rajitha Gunaratne**, Physics, Curtin University, Perth, Australia, joined Fall 2015.
- 4) **Thomas Ho**, Materials Science, graduated Summer 2016
Dissertation: In-Vitro Behavior Magnesium Alloy AZ31B Hydroxyapatite Metallic Matrix Composites Processed via Friction Stir Processing
- 5) **Ravi Shankar Rajamure**, Materials Science, graduated Fall 2014
Dissertation: Laser Surface Alloying of Refractory Metals on Aluminum for Enhanced Corrosion Resistance: Experimental and Computational Approach
- 6) **Shravan Katakam**, Materials Science, Graduated Spring 2014
Dissertation: Laser Surface Treatment of Amorphous Metals
Status: Intel
- 7) **Hitesh Vora**, Materials Science, graduated Fall 2013
Dissertation: Integrated Computational and Experimental Approach to Control Physical Texture During Laser Machining of Structural Ceramics
Status: Assistant Professor, Oklahoma State University, Spring 2015.
- 8) **Sameer Paital**, Materials Science, Graduated Summer 2010
Dissertation: Laser Textured Ca-P Bio-ceramic Coatings on Ti-alloy for Improved Wettability and Bone Cell Compatibility
Status: Research Engineer, Intel, 2011-.
- 9) **Anoop Samant**, Materials Science, Graduated Summer 2009
Dissertation: Laser Machining of Structural Ceramics: Computational and Experimental Analysis
Status: Research Engineer, Mesocoat, 2010-.
- 10) **Anil Kurella**, Materials Science, Graduated Summer 2009
Dissertation: Laser Induced Hierarchical Coatings on Titanium Alloy
Status: Materials Engineer, Intel, 2009-.
- 11) **Greg Engleman**, Materials Science, Graduated Fall 2008
Dissertation: Laser Surface Texturing for Improved Adhesion
- 12) **Sandip Harimkar**, Materials Science, Graduated Fall 2007
Dissertation: Laser Surface Structuring of Alumina
Status: Assistant Professor, Oklahoma State Univ., 2009-Present
- 13) **S. Nayak**, Materials Science, Graduate in Spring 2004
Dissertation: Laser Induced Surface Modification of Al-alloys
Status: Post Doctoral Research Associate with Prof Dahotre at UTK, Summer 2004-Fall 2004
Packaging Engineer, Intel, Phoenix Arizona, Spring 2004
- 14) **Arvind Agarwal**, Materials Science, Graduated in Fall 1999
Dissertation: Laser Surface Engineering of Composite Titanium Diboride Coating on Steel: Synthesis and Characterization
Status: Research Scientist/Engineer, Plasma Processing Inc, Huntsville, AL, Dec. 1999-Dec. 2002
Assistant Professor, Department of Mechanical and materials Engineering, Florida International University, Miami, FL, Jan. 2002-
- 15) **C. Xiao**, Engineering Science, Graduated in Spring 1997

Dissertation: Laser Induced Reaction Coating of Ceramic on Ceramic for High Temperature Corrosion Protection

Status: Post Doctoral Research Associate, Department of Mechanical and Materials Engineering, Southern University, Baton Rouge, LA, Summer 1997-Summer 1998

Manager, Seacat Inc., Lexington, KY, Fall 1998-

16) Kevin Zysk, Engineering Science, Graduated in 1994

Dissertation: Electron beam welding of copper to steel: Study of Evolution of Interface

Status: Senior Scientist, Edward Airforce Base, CA 2000-

17) **S. Gopinathan**, Engineering Science, Graduated in Summer 1992

Dissertation: Laser Joining of Metal Matrix Composites

Status: Deputy General Manager, Alpha Lava, Pune, India, Fall 1992-

Post-Doctoral Fellows

C, Xiao (1998), R. Singh (2003-04), S. Nayak (2004), B. Du (2007-08), S. Tian (2008), Yulang Yang (2009-10), S. Paital (2010-11), S. Soundarapandian (2012), Hitesh Vora (2013-14), Y. Liu (2014), Jianmin Li (2014-15).

PUBLICATIONS

PATENTS

Pending

1. **“Laser Assisted Machining (LAM) of Non-Monolithic Bone Material”**, Narendra B. Dahotre and S. Santhanakrishnan, Application/Serial No. 62/352,275, June 20, 2016.
2. **“Laser Assisted Machining (LAM) of Hard Tissues and Bones”**, Continuation-in-Part Application, Application/Serial No. 15/174747, June 6, 2016.

Patents (Jointly holds the following 16 U.S. Patents)

1. **“Laser Assisted Machining (LAM) of Hard Tissues and Bones”**, Narendra B. Dahotre and S. Santhanakrishnan, US Patent 9,387,041, July 12, 2016.
2. **“Method for Gas Assisted Energy Beam Engraving of a Target Object”**, US Patent 6,660,962, December 9, 2003.
3. **“Method for Marking Steel and Aluminum Alloys”**, US Patent 6,497,985, December 24, 2002.
4. **“Method for Producing Decorative Appearing Bumper Surfaces”** US Patent 6423162B1 July 23 2002.
5. **“Method for Practicing a Feedback Controlled Laser Induced Surface Modification”**, US Patent 6,350,326 B1, February 26, 2002
6. **“Method for Increasing the Wear Resistance in an Engine Cylinder Bore and Improved Automotive Engine”**, US Patent 6,628,026 B1, December 11, 2001.
7. **“Method for Increasing the Wear Resistance in an Aluminum Cylinder Bore”**, US Patent 6,299,707, October 9, 2001.
8. **“Method for Improving the Wear and Corrosion Resistance of Material Transport Trailer Surfaces”**, US Patent 6,294,225 B1, September 25, 2001.
9. **“Method for Producing Alloyed Bands or Strips on Piston for Internal Combustion Engines”**, US Patent 6,284,067 B1, September 4, 2001.
10. **“Method for Laser/Plasma Surface Alloying”**, US Patent 6,229,11 B1, May 8, 2001.
11. **“Method for Marking, Tracking, and Managing Hospital Instruments”**, US Patent 6,223,137 B1, April

24, 2001.

12. **"Method for Joining Dissimilar Metals or Alloys"**, US Patent 6,173,886 B1, January 16, 2001.
13. **"Apparatus and Method for Producing An Improved Laser Beam"** US Patent 6,016,227 January 18, 2000.
14. **"Method for Laser Induced Improvement of Surfaces"**, US Patent 5,985,056, Nov. 16, 1999.
15. **"Apparatus for Laser Alloying Induced Improvement of Surfaces"**, US Patent 5,961,861, Oct. 5, 1999.
16. **"Laser Bonding Process for Ceramic Articles"**, US Patent 5,503,703; April 2, 1996.

BOOKS

Author

1. **"Machining of Bones and Hard Tissues"** Springer International Publishing, AG Switzerland, June 2016, pp. 181, ISBN: 978-3-319-39157-1.
2. **"Laser Machining of Advanced Materials"**, CRC Press-Taylor Francis Group, New York, February 2011, pp. 236, ISBN: 978-0-415-58562-0.
3. **"Laser Machining and Fabrication of Materials"**, Springer, New York, November 2007, pp. 450, ISBN: 978-0-387-72343-3.
4. **"Materials Science in Manufacturing"**, Academic/Elsevier, NY, 2006, pp. 628, ISBN: 0-7506-7716-3.

Editor

Monographs

1. **"Intermetallic and Ceramic Coatings"**, Marcel Dekker, Inc., New York, January 1999, 504 pp., ISBN: 0-8247-9913-5.
2. **"Lasers in Surface Engineering"**, ASM International, Materials Park, Ohio, 628 pp., 1998, ISBN:0-87180-665-2.

Conference Proceedings

1. **"Surfaces and Interfaces in Nanostructured Materials - II"**, The Metallurgical Society of AIME, Warrendale, PA, 2006, pp. 143, ISBN:978-0-87339-626-4.
2. **"Surface Engineering in Materials Science III"**, The Metallurgical Society (TMS) of AIME, Warrendale, PA, 2005, 358 pp., ISBN:0-87339-590-5.
3. **"Surfaces and Interfaces in Nanostructured Materials"**, The Metallurgical Society of AIME, Warrendale, PA, 2004, pp. 398, ISBN:0-87339-566-2.
4. **"Heat Treating and Surface Engineering"**, ASM International, Materials Park, Ohio, 2003, 603 pp., ISBN: 0-87170-797-7
5. **"Surface Engineering: Coatings and Heat Treatment"**, ASM International, Materials Park, Ohio, 2003, 730 pp., ISBN:0-87170-781-0.
6. **"Surface Engineering in Materials Science II"**, The Metallurgical Society (TMS) of AIME, Warrendale, PA, 2003, 494 pp., ISBN:0-87339-537-9.
7. **"Elevated Temperature Coatings: Science and Technology-IV"**, The Metallurgical Society (TMS) of AIME, Warrendale, PA, 2001, 362 pp., ISBN: 0-87339-489-5.

8. **"Surface Engineering in Materials Science I"**, The Metallurgical Society (TMS) of AIME, Warrendale, PA, 2000, 460 pp., ISBN:0-87339-471-2.
9. **"Elevated Temperature Coatings: Science and Technology-III"**, The Metallurgical Society (TMS) of AIME, Warrendale, PA, 1999, 424 pp., ISBN:0-87339-421-6.
10. **"Elevated Temperature Coatings: Science and Technology-II"**, The Metallurgical Society (TMS) of AIME, Warrendale, PA, 1996, 457 pp., ISBN:0-87339-313-9.
11. **"Elevated Temperature Coatings: Science and Technology-I"**, The Metallurgical Society (TMS) of AIME, Warrendale, PA, 1995, 440 pp., ISBN: 0-87339-289-2.

BOOK CHAPTERS

1. "Laser Surface Engineering for Tribology" Sameehan Joshi and Narendra B. Dahotre, to be published in **ASM Handbook, Volume 18: Friction, Lubrication and Wear Technology**, 2016.
2. "Laser Surface Hardening", S. Santhanakrishnan Narendra B. Dahotre, **ASM Handbook, Volume 4A, Steel Heat Treating Fundamentals and Processes**, Editors: Jon Dossett and George E. Totten, pp. 1-26, American Society for Materials (ASM) International, Materials Park, Ohio, 2013.
3. "Nanocrystalline Diamond", Narendra B. Dahotre and P. D. Kichambare, **Encyclopedia of Nanoscience and Nanotechnology**, Editor: H.S. Nalwa, American Scientific Publishers, Stevenson Ranch, CA, January 2004.
4. "Laser Surface Texturing", V.V. Semak and Narendra B. Dahotre, a chapter in the book: **Lasers in Surface Engineering**, Editor: Narendra B. Dahotre, American Society for Materials (ASM) International, Materials Park, Ohio, p35, ISBN:0-87180-665-2.
5. "Promise of Lasers: Past and Future in Materials Processing", Narendra B. Dahotre, a chapter in the book: **Lasers in Surface Engineering**, Editor: Narendra B. Dahotre, American Society for Materials (ASM) International, Materials Park, Ohio, p13, ISBN:0-87180-665-2.
6. "Surface Preparation and Properties for Coating Deposition", Arvind Agarwal and Narendra B. Dahotre, a chapter in the book: **Intermetallic and Ceramic Coatings**, Editors: Narendra B. Dahotre and T.S. Sudarshan, Marcel Dekker, Inc, New York, Jan. 1999, ISBN: 0-8247-9913-5.

REVIEWED JOURNAL PUBLICATIONS

Submitted

1. "Electrochemical and DFT Studies of Laser-alloyed TiB₂/TiC/Al Coatings on Aluminum Alloy", Dunja Ravnkar, Uros Trdan, Narendra B. Dahotre, Ravi Shanker Rajamure, Janez Grum, **Corrosion Science**, August 22, 2016.
2. "Integrated Experimental and Computational Approach to Laser Machining of Structural Bone", Narendra B. Dahotre, Soundarapandian Santhanakrishnan, Sameehan S. Joshi, Riaz J.K. Khan, Daniel P. Fick, William B. Robertson, Raymond K. Sheh, and Charlie Ironside, **Lasers in Medicine and Surgery**, December 18, 2016.

Published

1. "Effect of Laser Surface Melting on Microstructure and Corrosion Behavior of AZ31B Mg Bio-implant", Tsao-Chang Wu, Yee-Hsien Ho, Sameehan S. Joshi, Ravi S. Rajamure, and Narendra B. Dahotre, **Lasers in Medical Science**, DOI: 10.1007/s10103-017-2174-1, 2017.

2. "A Review of the Physiological and Histological Effects of Laser Osteotomy", Rajitha Gunaratne, Riaz Khan, Daniel Fick, Brett Robertson, Narendra Dahotre, Charlie Ironside, **Journal of Medical Engineering & Technology**, Vol. 41, No. 1, pp. 1-12, 2017.
3. "Crystallization behavior during tensile loading of laser treated Fe-Si-B metallic glass", Sameehan S. Joshi, Iman Ghamarian, Peyman Samimi, Shravana Katakam, Peter C. Collins, and Narendra B. Dahotre, **Philosophical Magazine**, <http://dx.doi.org/10.1080/14786435.2016.1265681>, 2016.
4. "Effect of friction stir processing on microstructure and mechanical properties of laser-processed Mg-4Y-3Nd alloy", N. Kumar, R. S. Mishra, N. B. Dahotre, R.E. Brennan, K.J. Doherty, K.C. Cho, **Materials and Design**, Volume 110, pp: 663-675, 2016.
5. "Optimization of laser thermal treatment of Fe-Si-B metallic glass", Sameehan S. Joshi, Jonathan Z. Lu, Narendra B. Dahotre, **Journal of Manufacturing Processes**, Vol.24, pp. 31-37, 2016.
6. "Laser Joining of Plain Carbon Steel Using Fe-based Amorphous Alloy Filler", Sandip Harimkar, Hitesh Vora, and Narendra B. Dahotre, **Journal of Materials Processing Technology**, Vol. 238, pp: 55-64, 2016.
7. "Additive Manufacturing via Surface Engineering", Narendra B. Dahotre, Hitesh D. Vora, and Benjamin Boesl, **Journal of Minerals, Metals and Materials Society (JOM)**, Vol. 68, No. 7, pp. 1759-1761, 2016.
8. "Laser Assisted Additively Manufactured Transition Metal Coating on Aluminum", Hitesh D. Vora, Ravi Shanker Rajamure, Anurag Roy, S.G. Srinivasan, G. Sundararajan, Rajarshi Banerjee, Narendra B. Dahotre, **Journal of Minerals, Metals and Materials Society (JOM)**, Vol. 68, No. 7, 2016.
9. "In Situ Nanocrystallization-Induced Hardening of Amorphous Alloy Matrix Composites Consolidated by Spark Plasma Sintering", Ashish Singh, Tanaji Paul, Shravana Katakam, Narendra B. Dahotre, and Sandip P. Harimkar, **Journal of Minerals, Metals and Materials Society (JOM)**, Vol. 68, No. 7, 2016.
10. "Thermodynamics and Kinetics of Laser Induced Transformation in Zirconium based Bulk Metallic Glass", Hitesh Vora, Sanghita Mridha, Shravana Katakam, Harpreet Singh Arora, Sundeep Mukherjee, and Narendra B. Dahotre, **Journal of Non-crystalline Solids**, Vol. 432, Part B, pp. 237-242, 2016.
11. "Direct-deposited MoS₂ Thin Film Electrodes for High Performance Supercapacitors", Nitin Choudhary, Mumukshu Patel, Yee-Hsien Ho, Narendra B. Dahotre, Geon-Woong Lee, Jun Yeon Hwang, and Wonbong Choi, **J. Materials Chemistry A**, Vol. 3, pp. 24049-24054, 2015.
12. "Dynamic Crystallization During Non-isothermal Laser Thermal Treatment of Fe-Si-B Metallic Glass", Sameehan S. Joshi, Anna V. Gkriniaria, Shravana Katakam, Narendra B. Dahotre, **J. Phys. D: Appl. Phys.**, Vol. 48, No. 49, 2015.
13. "Tensile Behavior of Laser Treated Fe-Si-B Metallic Glass", Sameehan S. Joshi, Peyman Samimi, Iman Ghamarian, Shravana Katakam, Peter C. Collins, Narendra B. Dahotre, **J. Appl. Phys.**, 118, 164904 (2015); <http://dx.doi.org/10.1063/1.493463>.
14. "Influence of Niobium on Laser De-vitrification of Fe-Si-B Based Amorphous Magnetic Alloys", T. Alam, T. Borkar, S. Joshi, S. Katakam, X. Chen, Narendra B. Dahotre, R.V. Ramanujan, and R. Banerjee, **Journal of Non-crystalline Solids**, Vol. 428, pp. 75-81, 2015.
15. "Amorphous Coatings and Surfaces on Structural Materials", Sameehan Joshi, Shravana Katakam, Harpreet Singh, Sundeep Mukherjee, and Narendra B. Dahotre, **Critical Reviews in Solid State and Materials Science**, Vol. 41, Issue 1, pp. 1-45, 2015.

16. "Evolution of Surface Topography during Three-Dimensional Laser Machining of Structural Alumina: Integrated Experimental and Computational Approach", Hitesh D. Vora and Narendra B. Dahotre; **J. Manufacturing Processes**, Vol. 19, No. 8, pp. 49-58, 2015.
17. "Laser Additive High Entropy Alloy Coating on Aluminum: Corrosion Behavior", Youkang Shon, Sameehan S. Joshi, Shravana Katakam, Ravi Shanker Rajamure, and Narendra Dahotre, **Materials Letters**, Vol. 142, pp. 122-125, 2015.
18. "Laser Alloyed Al - W Coatings on Aluminum for Enhanced Corrosion Resistance", Ravi Shanker Rajamure, Hitesh D. Vora, S. G. Srinivasan, Narendra B. Dahotre, **Applied Surface Science**, Vol. 328, pp. 205-214, 2015.
19. "Multiphysics Theoretical Evaluation of Thermal Stresses in Laser Machined Structural Alumina", Hitesh D. Vora and Narendra B. Dahotre, **Lasers in Manufacturing and Materials Processing**, Vol. 2, pp. 1-23, 2015,
20. "Effect of Iron on Enhancement of Magnetic Properties of Co-Fe Metallic Glasses", Medha Veligatla, Shravana Katakam, Santanu Das, Narendra Dahotre, Haein Choi-Yim, Sundeep Mukherjee", **Metallurgical and Materials Transactions A**, Vol. 46A, pp. 1019-1023, 2015.
21. "Laser Assisted High Entropy Alloy: Coating on Aluminum: Microstructural Evaluation", Shravana Katakam, Sanghita Mridha, Sundeep Mukherjee, Narendra Dahotre, **J. Appl. Phys.**, <http://dx.doi.org/10.1063/1.4895137>, 2014.
22. "Laser Surface Alloying of AZ31B Mg Alloy for Bio Wettability", Yee-Hsien Ho, Hitesh D Vora, and Narendra B. Dahotre, **J. Biomaterials Application**, DOI: 10.1177/0885328214551156, 2014.
23. "Laser Surface Modification of Molybdenum on Aluminum for Enhanced Wear Resistance", Ravi Shanker Rajamure, Hitesh D Vora, Niraj Gupta, Shivraj Karewar, S.G. Srinivasan, Narendra B. Dahotre, **Surface Coatings & Technology**, Vol. 258, pp. 337-342, 2014.
24. "MC3T3-E1 Osteoblast Adhesion to Laser Induced Calcium Phosphate Coating on Ti Alloy: an *In Vitro* Centrifugation Study", Lu Huang, Samuel Goddard, S. Soundarapandian, Yu Cao, Narendra B. Dahotre, and Wei He, **Biomaterials and Biomedical Engineering**, Vol. 1, No. 2, pp. 71-83, 2014.
25. "Synthesis of Al_{0.5}CoCrCuFeNi and Al_{0.5}CoCrFeMnNi High-entropy Alloys by Laser Melting", Travis G. Novak, Hitesh Vora, Rajiv S. Mishra, Marcus L. Young and Narendra B. Dahotre, **Metallurgical and Materials Transactions B**, Vol. 45, No. 5, pp. 1603-1607, 2014.
26. "Improved Soft Magnetic Properties by Laser De-vitrification of Fe-Si-B Amorphous Magnetic Alloys", C. Smith, S. Katakam, S. Nag, C. Xi, R.V. Ramanujan, Narendra B. Dahotre, and R. Banerjee, **Materials Letters**, Vol. 122, pp. 155-158, 2014.
27. "Structural Relaxation and Nanocrystallization Induced Laser Surface Hardening of Fe-based Bulk Amorphous Alloys", Ashish K. Singh, S. Habib Alavi, Sameer R. Paital, Narendra B. Dahotre and Sandip P. Harimkar, **Journal of Minerals, Metals and Materials Society (JOM)**, Vol. 66, No. 6, pp. 1080-1087, 2014.
28. "Integrated Experimental and Theoretical Approach for Corrosion and Wear Evaluation of Laser Surface Nitrided Ti-6Al-4V Biomaterial in Physiological Solution", Hitesh D Vora, Ravi Shanker Rajamure, Sanket N Dahotre; Yee-Hsein Ho, Rajarshi Banerjee, and Narendra B. Dahotre, **Journal of the Mechanical Behavior of Biomedical Materials**, Vol. 37, No. 9, pp. 153-164, 2014.
29. "Laser Patterning of Fe-Si-B Amorphous Ribbons in Magnetic Field", Shravana Katakam and Narendra B. Dahotre, **Journal of Applied Physics-A**, Vol. 117, pp. 1241-1247, 2014.

30. "Laser Assisted Fe-based Bulk Amorphous Coating: Thermal Effects and Corrosion", Shravana Katakam; Vivek Kumar; Soundarapandian Santhanakrishnan; Ravishankar Rajamure; Peyman Samimi; Narendra Dahotre, **Journal of Alloys and Compounds**, Vol. 604, pp. 266-272, 2014.
31. "Comparison of the Crystallization Behavior of Fe-Si-B-Cu and Fe-Si-B-Cu-Nb Based Amorphous Soft Magnetic Alloys" Casey Smith, Shravana Katakam, Soumya Nag, Y Zhang, Jiayan Law, R. Ramanujan, Narendra B. Dahotre, and Rajarshi Banerjee, **Materials & Metallurgical Transactions A**, Vol. 45A, pp. 2998-3009, 2014.
32. "Laser Machining of Structural Alumina: Influence of Moving Laser Beam on the Evolution of Surface Topography", Hitesh D. Vora and Narendra B. Dahotre, **International Journal of Applied Ceramic Technology**, DOI:10.1111/ijac.12223, pp: 1–14, 2014.
33. "Microstructure and Mechanical Properties of a Laser Coated TiB₂/TiC/Al Layer on an Aluminum Alloy Substrate", D. Ravnkar, N.B. Dahotre, and J. Grum, **Lasers in Engineering**, Vol. 29, pp. 53-68, 2014.
34. "Laser Assisted Crystallization of Ferromagnetic Amorphous Ribbons: A Multi-modal Characterization and Thermal Model Study", Shravana Katakam, Arun Devaraj, Mark Bowden, S.Santhanakrishnan, Casey Smith, Raju Ramanujan, Thevuthasan Suntharampillai, Rajarshi Banerjee, and Narendra B. Dahotre, **J. Applied Physics**, <http://dx.doi.org/10.1063/1.4829279>, Vol-114, pp-184901, 2013.
35. "Laser In-situ Synthesis of TiB₂-Al Composite Coating for Improved Wear Performance", Shravan Katakam, Nan Asiamah, S. Santhanakrishnan, and Narendra Dahotre, **Surface and Coatings Technology**, Vol. 236, No. 12, pp. 200-206, 2013.
36. "Wettability of Nano-textured Metallic Glass Surfaces", Harpreet Singh Arora, Quan Xu, Zhenhai Xia, Yee-Hsien Ho, Narendra Dahotre, Jan Schroers, Sundeep Mukherjee, **Scripta Materialia**, Vol 69, No. 10, pp. 732-735, 2013.
37. "Laser Induced Nitrogen Enhanced Titanium Surfaces for Improved Osseo-integration," Sanket N. Dahotre, Hitesh D. Vora, Ravi Shanker Rajamure, Lu Huang, Rajarshi Banerjee, Wei He, Narendra B. Dahotre, **Annals of Biomedical Engineering**, DOI: 10.1007/s10439-013-0898-z, 2013.
38. "Laser Coating of Aluminum Alloy EN AW 6082-T651 with TiB₂ and TiC: Microstructure and Mechanical Properties", Dunja Ravnkar, Narendra B. Dahotre, Janez Grum, **Applied Surface Science**, Vol. 282, pp. 914-922, 2013.
39. "Characterization of Nanocrystallization Behavior of Spark Plasma Sintered Fe₄₈Cr₁₅Mo₁₄Y₂C₁₅B₆ Bulk Amorphous Alloys Using Extended Q-Range Small Angle Neutron Scattering", Ashish Singh, Shravan Katakam, Jan Ilavsky, Narendra B. Dahotre, Sandip P. Harimkar, **J. Applied Physics**, 114, 054903 (2013); doi: 10.1063/1.4817379.
40. "Design and Optimization of Microstructure for Improved Corrosion Resistance of Laser Surface Alloyed Aluminum with Molybdenum", Hitesh D. Vora, Ravi Shankar Rajamure, S. Santhanakrishnan, S.G. Srinivasan, and Narendra B. Dahotre, **International Journal of Precision Engineering and Manufacturing**, Vol. 14, No. 8, pp. 1421-1432, 2013.
41. "Macro and Microstructural Study of Laser Processed WE43 (Mg-Y-Nd) Magnesium Alloy", S. Santhanakrishnan, N. Kumar, N. Dengde, D. Chaudhuri, S. Katakam, S. Palanivel, H.D. Vora, R. Banerjee, R.S. Mishra, and Narendra B. Dahotre, **Metallurgical and Materials Transactions B**, Vol. 44, Issue 5, pp: 1190-1200, 2013.
42. "Multiscale Laser Materials Engineering: Energy-Efficient Processing and Materials Performance", Narendra B. Dahotre, **Nanomaterials and Energy**, Vol. 2, Issue NME2, pp. 69-75, 2013
43. "Laser Machining of Structural Ceramics" Hitesh D. Vora and Narendra B. Dahotre, **American Ceramic Society Bulletin**, Vol. 92, No. 5, pp: 4-5, 2013

44. "Dilution of Molybdenum on Aluminum during Laser Surface Alloying", H.D.Vora, R.S. Rajamure, S. Soundarapandian, S. G. Srinivasan, Narendra B. Dahotre, **Journal of Alloys and Compounds**, Vol. 570, pp. 133-143, 2013.
45. "Laser Surface Modification of Alumina: Integrated Computational and Experimental Analysis", Marco A. Moncayo, Soundarapandian Santhanakrishnan, Hitesh D. Vora, Sameer R. Paital, and Narendra B. Dahotre, **Ceramic International**, Vol. 39, pp. 6207-6213, 2013.
46. "One-dimensional Multi-pulse Laser Machining of Structural Alumina: Evolution of Surface Topography", Hitesh D Vora, S. Santhanakrishnan, Sandip P. Harimkar, Sandra K. S. Boetcher, and Narendra B. Dahotre, the **International Journal of Advanced Manufacturing Technology**, Vol. 68, No. 1, pp. 69-83, 2013.
47. "Laser Deposited Biocompatible Ca-P coatings on Ti-6Al-4V: Microstructural Evolution and Thermal Modeling", Soumya Nag, Sameer R. Paital, Peeyush Nandawana, Kristopher Mahdak, Yee Hsien Ho, Hitesh Vora, Rajarshi Banerjee, Narendra B. Dahotre, **Materials Science & Engineering C: Materials for Biological Applications**, Vol. 33, Issue 1, pp: 165-173, 2013.
48. "Computational Modeling and Experimental Based Parametric Study of Multi-Track Laser Processing of Alumina", Marco A. Moncayo, Soundarapandian Santhanakrishnan, Hitesh D. Vora, Sameer R. Paital, and Narendra B. Dahotre, **Optics and Laser Technology**, Vol. 48, pp. 570-579, 2013.
49. "Synthesis of TiB₂-TiC/Fe Nano-composite Coating by Laser Surface Engineering", Baoshuai Du, Sameer R. Paital, and Narendra B. Dahotre, **Optics & Laser Technology**, Vol. 45, pp. 647-653, 2013.
50. "Evolution of Surface Topography in One-Dimensional Laser Machining Structural Alumina", H. D. Vora, S. Soundarapandian, S. P. Harimkar, S. K. S. Boetcher, and Narendra B. Dahotre, **Journal of the European Ceramic Society**, Vol. 32, Issue 16, pp: 4205-4218, 2012.
51. "Laser Coating of Hydroxyapatite on Mg for Enhanced Physiological Corrosion Resistance and Biodegradability", S. Santhanakrishnan, Y. H. Ho and N. B. Dahotre, **Materials Technology**, Vol. 27, No. 4, pp. 273-277, 2012.
52. "Fe-Based Amorphous Coatings on AISI 4130 Structural Steel for Corrosion Resistance", Shravan Katakam, S. Santhanakrishnan, and Narendra B. Dahotre, **Journal of Minerals, Metals and Materials Society (JOM)**, Vol. 64, No. 6, pp: 709-715, 2012.
53. "Stress-Induced Selective Nano-crystallization in Laser Processed Amorphous Fe-Si-B Alloys", Shravana Katakam, S. Santhanakrishnan, Hitesh Vora, Junyeon Hwang, R. Banerjee, and N. B. Dahotre **Philosophical Magazine Letters**, Vol. 92, Issue 11, pp: 617-624, 2012.
54. "In situ Laser Synthesis of Fe-based Amorphous Matrix Composite Coating on Structural Steel" Shravan Katakam, Sameer Paital, Junyeon Hwang, Rajarshi Banerjee, and Narendra Dahotre, **Metallurgical and Materials Transactions A**, Vol. 43, No. 13, pp: 4957-4966, 2012.
55. "Pulsed Laser Surface Modification of AZ31B Mg with Al-Si", Baoshuai Du, Sameer R. Paital, and Narendra B. Dahotre, **Surface Review and Letters**, Vol. 19, No. 02, (2012) 1250015, DOI: 10.1142/S0218625X12500151.
56. "Improved Corrosion and Wear Resistance of Mg Alloys via Laser Surface Modification of Al on AZ31B", Sameer R. Paital, Ananya Bhattacharya, Marco Moncayo, Yee Hsien Ho, Kristopher Mahdak, Soumya Nag, Rajarshi Banerjee, Narendra B. Dahotre, **Surface Coating & Technology**, Vol. 206, No. 8-9, pp. 2308-2315, 2012.
57. "Laser-induced Thermal and Spatial Nanocrystallization of Amorphous Fe-Si-B Alloy", Shravana Katakam, Jun Y. Hwang, Hitesh Vora, Sandip P. Harimkar, Rajarshi Banerjee and Narendra B. Dahotre, **Scripta Materialia**, Vol. 66, pp. 538-542, 2012.

58. "Densification Behavior and Wear Response of Spark Plasma Sintered Iron-based Bulk Amorphous Alloys", Ashish Singh, Sameer R. Paital, Abhinay Andapally, Narendra B. Dahotre, Sandip P. Harimkar, **Advanced Engineering Materials**, Vol. 14, Issue 6, pp: 400-407, 2012.
59. "Osteoblast Interaction with Laser Cladded HA and SiO₂-HA Coating on Ti-6Al-4V" Yuling Yang, Kaan Serpersu, Wei He, Sameer R Paital, and Narendra B Dahotre, **Materials Science and Engineering C**, Vol. 31, pp. 1643-1652, 2011.
60. "Electrochemical and Mechanical Behavior of Laser Processed Ti6Al4V Surface in Ringers Physiological Solution", Raghuvir Singh, S.K. Tiwari, Suman K. Mishra, and Narendra B. Dahotre, **J. Materials Science: Materials in Medicine**, Vol. 22, pp. 1787-1796, 2011.
61. "Laser Surface Modification for Synthesis of Controlled Textured Bioactive and Biocompatible Ca-P Coatings on Ti-6Al-4V", Sameer R. Paital, Nancy Bunce, Peeyush Nandwana, Chinmay Honrao, Soumya Nag, Wei He, Raj Banerjee, Narendra B. Dahotre, **Journal of Materials Science: Materials in Medicine**, Vol.22, No.6, pp. 1393-1406, 2011.
62. "Periodically Laser Patterned Fe-B-Si Amorphous Ribbons: Phase Evolution and Mechanical Behavior" Sandip P. Harimkar, Sameer R. Paital, Gangyao Wang, Peter K. Liaw, Narendra B. Dahotre, **Advance Engineering Materials**, Vol. 13, No. 10, pp. 955-960, 2011.
63. "Wear Behavior of Plasma Electrolytic Oxidation (PEO) and Hybrid Coatings of PEO and Laser on MRI 230D Magnesium Alloy", G. Rapheal, S. Kumar, C. Blawert and Narendra B. Dahotre, **Wear**, Vol. 271, Issues 9-10, pp. 1987-1997, 2011
64. "Absorptivity Transition in 1.06 μm Wavelength Laser Machining of Structural Ceramics", Anoop N. Samant and Narendra B. Dahotre, **Int. J. Appl. Ceramic Technology**, Vol. 8, Issue 1, pp: 127–139, January/February 2011.
65. "Wetting Effects on In-vitro Bioactivity and In-vitro Biocompatibility of Laser Micro-textured Ca-P Coating", Sameer R. Paital, Zheng Cao, Wei He, Narendra B. Dahotre, **Biofabrication**, Vol. 2, No. 2, pp. 1-14, 2010
66. "Wetting and *in Vitro* Bioactivity of Laser Processed CaP Coating with Presence and Variation of SiO₂ on Ti-6Al-4V" Yuling Yang, Sameer R Paital, Narendra B Dahotre, **Materials Technology: Advanced Performance Materials**, Vol.25, No.3-4, pp.137-142, 2010.
67. "Laser Pulse Dependent Micro Textured Calcium Phosphate Coatings for Improved Wettability and Cell Compatibility", Sameer R. Paital, Wei He, Narendra B. Dahotre, **Journal of Materials Science: Materials in Medicine**, Vol. 21, No. 7, pp: 2187-2200, 2010.
68. "Laser Process Effect on the Texture Evolution and Wetting Behavior in Implantable Ti-6Al-4V Alloys", Sameer R. Paital, Wei He, Claus Daniel, and Narendra B. Dahotre, **Journal of Minerals, Metals and Materials Society (JOM)**, Vol. 62, No. 6, pp: 76-83, 2010.
69. "Effects of SiO₂ Substitution on Wettability of Laser Deposited Ca-P Biocoating on Ti-6Al-4V" Yuling Yang, Sameer R Paital, Narendra B Dahotre, **Journal of Materials Science: Materials in Medicine**, Vol. 21, pp. 2511-2521, 2010.
70. "Fractal Approach to Laser Processed Surfaces", Anil Kurella and Narendra Dahotre, **Advanced Engineering Materials**, Vol. 12, Issue 6, pp: 517–521, 2010.
71. "Wetting Behavior of Laser Synthetic Micro Textures on Ti-6Al4V for Bioapplication" Narendra B Dahotre, Sameer R. Paital, Anoop N Samant, and Claus Daniel, **Philosophical Transactions of The Royal Society-A**, Vol. 368, pp. 1863-1889, 2010.

72. "Three- Dimensional Laser Machining of Structural Ceramics" Anoop N Samant, Baoshuai Du and Narendra B Dahotre, **J Manufacturing Processes**, Vol. 12, pp. 1-7, 2010.
73. "Fabrication and Evaluation of Pulse Laser Induced Ca-P Coating on a Ti-alloy for Bioapplication", Sameer R. Paital, Kantesh Balani, Arvind Agarwal, and Narendra B. Dahotre, **Biomedical Materials**, doi:10.1088/1748-6041/4/1/015009.
74. "A Thermal Model for Laser Interaction with Thick Dielectric Film on Metallic Substrate: Application to Ca-P Layer on Ti Alloy", Sameer R. Paital and Narendra B. Dahotre, **J. Alloys and Compounds**, Vol. 487, No.1-2, pp. 499-503, 2009.
75. "Faceted Surface Grain Morphology of Rapidly Solidified Alumina: Characterization and Potential Applications", Sandip P. Harimkar, Edward A. Kenik, Sanghoon Shim, and Narendra B. Dahotre, **Adv. Eng. Mater.**, Vol.11, No.12, pp. 1030-1033, 2009.
76. "Physical Effects of Multipass Two Dimensional Laser Machining of Structural Ceramics", Anoop N. Samant and Narendra B. Dahotre, **Adv. Eng. Mater.**, Vol. 11, No. 7, pp. 579-585, 2009.
77. "Computational Approach to Photonic Drilling of Silicon Carbide" by Anoop N Samant, Claus Daniel, Ron H Chand, Craig A Blue and Narendra B Dahotre, **International Journal of Advanced Manufacturing Technology**, Vol. 45, pp.704- 713, 2009.
78. "Microstructure and Properties of Spark Plasma Sintering of Fe-Cr-Mo-Y-B-C Bulk Metallic Glass", Sandip P. Harimkar, Sameer R. Paital, Ashish Singh, Robert Aalund, and Narendra B. Dahotre, **J. Non-Crystalline Solids**, Vol. 355, pp. 2179-2182, 2009.
79. "Calcium Phosphate Coatings for Bio Implant Applications: Materials, Performance Factors, and Methodologies", Sameer R. Paital and Narendra B. Dahotre, **Materials Science & Engineering – R: Reports**, Vol. 66, No. 1-3, pp. 1-70, 2009.
80. "In-situ Absorptivity Prediction during 1.06 μm Wavelength Laser Low Aspect Ratio Machining of Structural Ceramics" Anoop N Samant, Baoshuai Du and Narendra B Dahotre, **Physica Status Solidi**, Vol. 206, No. 7, pp. 1433-1439, 2009.
81. "Wettability and Kinetics of Hydroxyapatite Precipitation on Laser Textured Ca-P Bioceramic Coating", Sameer R. Paital and Narendra B Dahotre, **Acta Biomaterialia**, Vol. 5, No. 7, pp. 2763-2777, 2009.
82. "Laser Surface Cladding of MRI 153M Magnesium Alloy with (Al+Al₂O₃)", M. Hazra, A. K. Mondal, S. Kumar, C. Blawert, and Narendra. B. Dahotre, **Surface and Coating Technology**, Vol. 203, No. 16, pp. 2292-2299, 2009.
83. "Pulsed Laser Surface Treatment of Magnesium: Correlation between Thermal Model and Experimental Observations", Anoop N. Samant, Baoshuai Du, Sameer R. Paital, Subodh Kumar, and Narendra B. Dahotre, **J. Materials Processing Technology**, Vol. 209, No. 11, pp. 5060-5067, 2009
84. "Rapid Surface Microstructuring of Porous Alumina Ceramic Using Continuous Wave Nd:YAG Laser", Sandip P Harimkar, Narendra B Dahotre, **J. Materials Processing Technology**, Vol. 209, No. 10, pp. 4744-4749, 2009.
85. "Laser Surface Multilevel Self Assembly of CaP-TiO₂ Particles" Anil K. Kurella, Anoop N Samant, and Narendra B Dahotre, **Journal of Applied Physics**, Vol. 29, No. 6, pp. 969-993, 2009.
86. "Laser Machining of Structural Ceramics: A Review", Anoop N. Samant and Narendra B. Dahotre, **Journal of European Ceramic Society**, Vol. 29, No. 6, pp. 969-993, 2009.
87. "Laser Melting of Plasma Sprayed Aluminum Oxide Coatings Reinforced with Carbon Nanotubes", Y. Chen, A. Samant, K. Balani, Narendra B. Dahotre, A. Agarwal, **Applied Physics-A: Materials Science & Processing**, Vol. 94, No. 4, pp 861-870, 2009.

88. "An Integrated Computational Approach to Single Dimensional Laser Machining of Magnesia" Anoop N. Samant, and Narendra B. Dahotre, **Optics and Lasers in Engineering**, Vol. 47, No. 5, pp. 570-577, 2009.
89. "Differences in Physical Phenomena Governing Laser Machining of Structural Ceramics", Anoop N. Samant and Narendra B. Dahotre, **Ceramic International**, Vol. 35, No. 5, pp. 2093-2097, 2009.
90. "Physical Effects of Multipass Two-Dimensional Laser Machining of Structural Ceramics", Anoop N. Samant and Narendra B. Dahotre, **Adv. Eng. Materials**, Vol. 11, No. 7, pp. 579-585, 2009.
91. "Laser Surface Coating of Fe-Cr-Mo-Y-B-C Bulk Metallic Glass Composition on AISI 4140 Steel", A. Basu, A.N. Samant, S.P. Harimkar, J. Dutta Majumdar, I. Manna, and Narendra B. Dahotre, **Surface & Coatings Technology**, Vol. 202, No. 12, pp. 2623-2631, 2008.
92. "Pulsed Laser Synthesis of Ceramic-Metal Composite Coating on Steel", Baoshuai Du, Anoop N. Samant, Sameer R. Paital, and Narendra B. Dahotre, **Applied Surface Science**, Vol. 255, pp. 3188-3194, 2008.
93. "Multiscale Wear of Plasma-sprayed Carbon-nanotube-reinforced Aluminum Oxide Nanocomposite Coating", Kantesh Balani, Sandip P. Harimkar, Anup Keshri, Yao Chen, Narendra B. Dahotre, Arvind Agarwal, **Acta Materialia**, Vol. 56, pp. 5984-5894, 2008.
94. "Laser Based Biomimetic and Bioactive Coatings", Sameer R. Paital and Narendra B. Dahotre, **Materials Science and Technology**, Vol. 24, No. 9, pp. 1144-1161, 2008.
95. "Phase Constituents and Microstructure of Laser Synthesized TiB₂-TiC Reinforced Composite Coating on Steel", Baoshuai Du and Narendra B. Dahotre, **Scripta Materialia**, Vol. 59, pp. 1147-1150, 2008.
96. "Computational Predictions in Single-Dimensional Laser Machining of Alumina", Anoop N. Samant and Narendra B. Dahotre, **International Journal of Machine Tools & Manufacture**, Vol. 48, No. 12-13, pp. 1345-1353, 2008.
97. "Ab initio Physical Analysis of Single Dimensional Laser Machining of Silicon Nitride", Anoop N. Samant and Narendra B. Dahotre, **Advanced Engineering Materials**, Vol. 10, No. 10, pp. 978-981, 2008.
98. "Controlled Evolution of Morphology and Microstructure in Laser Interference Structured Zirconia", Claus Daniel, Beth L. Armstrong, Narendra B. Dahotre, **J. Amer. Ceram. Soc.**, Vol. 91, No. 7, pp. 2138-2142, 2008.
99. "Process Optimization in Laser Surface Structuring of Alumina", Anoop N. Samant, Sameer R. Paital and Narendra B. Dahotre, **J. Mater. Proc. Tech.**, No. 203, pp. 498-504, 2008.
100. "Microindentation Fracture Behavior of Laser Surface Modified Alumina Ceramic", Sandip P. Harimkar and Narendra B. Dahotre, **Scripta Materialia**, No. 58, pp. 545-548, 2008.
101. "Effect of Microstructural Evolution on Wettability of Laser Coated Calcium Phosphate on Titanium Alloy", Anil K. Kurella, Michael Z. Hu, and Narendra B. Dahotre, **Materials Science and Engineering -C: Biomimetic Materials, Sensors and Systems**, Vol. 28, No. 8, pp. 1560-1564, 2008.
102. "Effect of Laser Surface Treatment on Corrosion and Wear Resistance of ACM720 Mg Alloy", A. K. Mondal, S. Kumar, C. Blawert and Narendra B. Dahotre, **Surface & Coatings Technology**, Vol. 202, No. 14, pp. 3187-3198, 2008.

103. "Multilevel Residual Stress Evaluation in Laser Surface Modified Alumina", Anoop N. Samant¹, and Narendra B. Dahotre, **Applied Physics A: Materials Science & Processing**, Vol. 90, pp. 493-499, 2008.
104. "Laser Surface Processing of Ti6Al4V in Gaseous Nitrogen: Corrosion Performance in Physiological Solution", Raghuvir Singh, S. Ghosh Chowdhury, S. K. Tiwari and Narendra B. Dahotre, **J. Mater. Sci: Mater. Med.**, Vol. 19, pp. 1363-1369, 2008.
105. "Influence of Laser Fluence on the Microstructure Evolution and Fractal Dimensions of Laser Surface Modified Alumina Ceramic", Sandip P. Harimkar and Narendra B. Dahotre, **Materials Characterization**, Vol. 59, pp. 700-707, 2008.
106. "Effect of Laser Surface Treatment on Microstructure and Properties of MRI 230D Mg Alloy", A.L.Mondal, S. Kumar, C. Blawert, and Narendra B. Dahotre, **Materials Science Forum**, Vols. 539-543, pp. 1153-1158, 2007.
107. "Laser Beam Operation Mode Dependent Grain Morphology of Alumina", Anoop N. Samant, Sandip P. Harimkar and Narendra B. Dahotre, **J. Appl. Phys.**, 102, 123105, 2007.
108. "Laser Surface Treatment for Porous and Textured Ca-P Bio-Ceramic Coating on Ti-6Al-4V", Sameer R. Paital and Narendra B. Dahotre, **Biomedical Materials**, Vol. 2, pp. 274-281, 2007.
109. "Laser Surface Cladding of Fe-Cr-Mo-Y-B-C Bulk Metallic Glass on AISI 4041 Steel", A. Basu, A. N. Samant, S. P. Harimkar, J. Dutta Majumdar, I. Manna, and Narendra B. Dahotre, **Surface and Coatings Technology**, Vol. 202, pp. 2623-2631, 2007.
110. "Temporally Evolved Recoil Pressure Driven Melt Infiltration During Laser Surface Modifications of Porous Alumina Ceramic", Sandip P. Harimkar, Anoop. N. Samant, and Narendra B. Dahotre, **J. Appl. Phys.**, Vol. 101, 054911-1/7, 2007.
111. "Tribological Behavior of Plasma Sprayed Carbon Nanotube Reinforced Hydroxyapatite-Coating in Physiological Solution", Kantesh Balani, Yao Chen, Sandip P. Harimkar, and Narendra B. Dahotre, Arvind Agarwal, **Acta Biomaterialia**, Vol. 3, pp. 944-951, 2007.
112. "Laser Surface Modifications of Advanced ceramics – A Modeling Approach", Anoop N. Samant, Sandip P. Harimkar, and Narendra B. Dahotre, **Journal of Minerals, Metals and Materials Society (JOM)**, Vol. 59, No. 8, 2007.
113. "Validation of Crystallographic Correlation for Faceted Morphology in Laser Surface Engineered Alumina Ceramic", S.P. Harimkar, C. Daniel, C. Holzappel, P. Leibenguth, F. Mücklich, and Narendra B. Dahotre, **Scripta Mater**, Vol. 57, Issue 5, pp. 401-404, 2007.
114. "Corrosion Degradation and Prevention by Surface Modification of Biometallic Materials", Raghuvir Singh and Narendra B. Dahotre, **J. Materials Science: Materials in Medicine**, Vol. 18, pp. 725-751, 2007.
115. "State of Residual Stress in Laser Deposited Ceramic Composite Coatings on Aluminum Alloy", P.B. Kadolkar, T.R. Watkins, J. Th. M. DeHosson, B.J. Kooi, and Narendra B. Dahotre, in **Acta Materialia**, Vol. 55, pp. 1203-1214, 2007.
116. "Laser Assisted Densification of Surface Porosity in Structural Alumina Ceramic", S.P. Harimkar and N.B. Dahotre, **Physica Status Solidi (a)**, Vol. 204, No. 4, pp.1105-1113, 2007.
117. "Laser Cleaning and Dressing of Vitrified Grinding Wheels", M.J. Jackson, A. Khangar, X. Chen, G.M. Robinson, V.C. Venkatesh, Narendra B. Dahotre; **Journal of Materials Processing Technology**, Vol. 185, pp. 17–23. 2007.
118. "Computational prediction of grain size during rapid laser surface modification of Al-O Ceramic",

- Anoop N. Samant and Narendra B. Dahotre, **Physica Status Solidi (Rapid Research Letters)**, pp. 1-3, 2006.
119. "Effect of Laser Fluence on Surface Microstructure of Alumina Ceramic", S.P. Harimkar and N.B. Dahotre, **Advances in Applied Ceramics**, Vol. **105**, pp. 304-308, 2006.
 120. "Laser Induced Hierarchical Calcium Phosphate Structures", Anil Kurella and Narendra B. Dahotre, **Acta Biomaterialia**, Vol. 2, pp. 677-688, 2006.
 121. "Microgrinding Hypereutectoid Steels Using Laser Modified Corundum Abrasive Materials", M. J. Jackson, G. M. Robinson, A. Khangar, E. A. Kenik, and Narendra B. Dahotre; **International Journal of Machining and Machinability of Materials**, Vol 1, No. 1, pp. 12-26, 2006.
 122. "Laser Induced Functionally Textured Bio-coating", Anil Kurella and Narendra B. Dahotre, **Journal of Minerals, Metals and Materials Society (JOM)**, Vol. 58, No. 7, pp. 64-66, 2006.
 123. "Crystallographic and Morphological Textures in Laser Surface Modified Alumina Ceramic", S.P. Harimkar and Narendra B. Dahotre, **J. Applied Phys.** Vol. 100, pp. 1-6, 2006.
 124. "Laser Dressing of Alumina Grinding Wheels", Abhijeet Khangar, Narendra B. Dahotre, Mark J. Jackson, Grant M. Robinson, **J. Materials Engineering and Performance**, Vol. 15, No. 2, pp. 178-181(4), 2006.
 125. "Phase Modulated Hierarchical Surface Structures by Interfering Laser Beams", Claus Daniel and Narendra B. Dahotre, **Advanced Engineering Materials**, Vol. 8, No. 10, pp. 925-932, 2006.
 126. "Evolution of Surface Morphology in Laser dressed Alumina Grinding Material", S. P. Harimkar, and Narendra B. Dahotre, **Intl. J. Appl. Ceramic Technology**, Vol. 3, No. 5, pp. 375-381, 2006.
 127. "Laser Induced Multi-scale Textured Zirconia Coating on Ti-6Al-4V", Anil Kurella and Narendra B. Dahotre, **J. Materials Science: Materials in Medicine**, Vol.17, pp. 565-572, 2006.
 128. "Prediction of Solidification Microstructures During Laser Dressing of Alumina Grinding Wheel Material", S. P. Harimkar, A. N. Samant, A. A. Khangar, and Narendra B. Dahotre, **J. Physics-D: Applied Physics**, Vol. 39, pp. 1642-1649, 2006.
 129. "High-density-infrared Treatment of Mineral Processing Equipment for Enhanced Wear Resistance", Minerals Engineering, D. Tao, C. Blue, N.B. Dahotre, R. Honaker, B.K. Parekh, P.G.Engleman, C. Zhao, H. Han, **Minerals Engineering**, Vol. 19, pp.190-196, 2006.
 130. "Laser Synthesis of Palladium-Alumina Composite Membranes for Production of High Purity Hydrogen from Gasification", Applied Surface Science", Binay Singh, Atul Sheth, and Narendra B. Dahotre, **Applied Surface Science**, Vol. 253, No. 3, pp. 1247-1254 2006.
 131. "Molecular Modeling of Metastable FeB₄₉ Phase Evolution in Laser Surface Engineered Coating", Kantesh Balani, Arvind Agarwal, and Narendra B. Dahotre, **Journal of Applied Physics**, Vol. 99, pp. 1-4, 2006.
 132. "Laser Surface Cladding of Fe-B-C, Fe-B-Si and Fe-BC-Si-Al-C on Plain Carbon Steel", I. Manna, J. Dutta Majumdar, B. Ramesh Chandra, S. Nayak, and Narendra B. Dahotre, **Surface and Coatings Technology**, Vol. 201, pp. 434-440, 2006.
 133. "Laser Surface Modification of Ti-6Al-4V: Wear and Corrosion Characterization in Simulated Bio-fluids", R. Singh, A. Kurella, and Narendra B. Dahotre, **Journal of Biomaterials Applications**, Vol. 21, No. 1, pp. 46-72, 2006.
 134. "Tribology of Laser Modified Surface of Stainless Steel in Physiological Solution", Raghuvir Singh and Narendra B. Dahotre, **J. Mater. Sci**, Vol. 40, No. 21, pp. 5619-5626, 2005.

135. "The Application of Laser-Induced Multi-Scale Surface Texturing", P. Gregory Engleman, Anil Kurella, Anoop Samant, Craig A. Blue, and Narendra B. Dahotre, **Journal of Minerals, Metals and Materials Society (JOM)**, Vol. 57, No. 12, pp. 46-50, 2005.
136. "Morphological Modification in Laser Dressed Alumina Grinding Material for Microscale Grinding", A. Khangar and Narendra B. Dahotre, **J. Materials Processing Technology**, Vol. 170, pp. 1-10, 2005.
137. "Microstructure and Microtexture in Laser-dressed Alumina Grinding Wheel Material", A. Khangar, Edward A. Kenik, and Narendra B. Dahotre, **Ceramics International**, Vol. 31, pp. 621-629, 2005
138. "A Comparative Study to Estimate Effective Elastic Modulus of Laser Engineered Composite Boride Coating", T. Laha, A. Agarwal, and Narendra B. Dahotre, **Advanced Engineering Materials**, Vol.7, No. 7, pp.326-328, 2005.
139. "Thermal Transitions in Fe-Ti-Cr-C Quaternary System used as Precursor During Laser In-Situ Carbide Coating", A. Singh, Wallace D. Porter, and Narendra B. Dahotre, **Materials Science and Engineering: A**, Vol. 399, pp. 318-325, 2005.
140. "Tribology of Laser Modified Surface of Stainless Steel in Physiological Solution", R. Singh and Narendra B. Dahotre, **J. Materials Science**, Vol. 40, No. 21, pp. 5619-5626, 2005.
141. "Nanocoating for Engine Application", S. Nayak and Narendra B. Dahotre, **Surface and Coatings Technology**, Vol. 194, pp. 58-67, 2005.
142. "Surface Modification for Bioimplants: The Role of Laser Surface Engineering", Anil Kurella and Narendra B. Dahotre, **Journal of Biomedical Applications**, Vol. 20, No. 1, pp. 5-50, 2005.
143. "Influence of Laser Surface Modification on Corrosion Behavior of Stainless Steel 316L and Ti6Al4V in Simulated Body Fluid" Raghuvir Singh, Madhavi Martin and Narendra B. Dahotre **Surface Engineering**, Vol. 21, No. 4, pp. 1-10, 2005.
144. "Observation of Exothermic Reaction During Laser Assisted Iron Oxide Coating on Aluminum Alloy" by S. Nayak, Hsin Wang, Edward A. Kenik, Ian M. Anderson and Narendra B. Dahotre, **Materials Science and Engineering: A**, Vol. 390, Issues 1-2, pp. 404-413, 2005.
145. "Phase Evolution during Laser *In-Situ* Carbide Coating", Anshul Singh and Narendra B. Dahotre, **Metallurgical and Materials Transactions-A**, Vol. 36A, pp. 797-803, 2005.
146. "Thermography During Laser Surface Melting of Cast Aluminum Alloy", by S. Nayak, H. Wang, and Narendra B. Dahotre, **Materials Science and Technology**, Vol. 20, pp. 1609-1614, 2004.
147. "Auger Microscopy of Laser Induced Fe-oxide/Al Reaction Composite Coating", S. Nayak, H.M. Meyers, III, and Narendra B. Dahotre, **Surface Engineering**, Vol. 20, No. 1, pp. 48-52, 2004.
148. "Laser In-Situ Synthesis of Combinatorial Coating on Steel", Anshul Singh and Narendra B. Dahotre, **Journal of Materials Science**, Vol. 39, pp. 4553-4560, 2004.
149. "In-situ Formation of Ni-alumina Nanocomposite During Laser Processing", S.C. Kuiry, S. Wannaparhum, Narendra B. Dahotre, and S. Seal, **Scripta Materialia**, Vol. 50, pp. 1237-1240, 2004.
150. "Infrared Thermography During Laser Surface Engineering of Ceramic Coating on Metal", Puja Kadolkar, H. Wang, T. R. Watkins, and Narendra B. Dahotre, **Int. J. Advanced Manufacturing Technology**, Vol. 23, No. 7, pp. 350-357, 2004.
151. "Nanosurfacing for Engine Application", S. Nayak and Narendra B. Dahotre, **Journal of Minerals, Metals and Materials Society (JOM)**, Vol. 56, No. 1, pp. 46-48, 2004.

152. "Instrumented Indentation Characterization of Laser-Remelted A319Al Alloy", S. Nayak, L. Reister and Narendra B. Dahotre, **Journal of Materials Research**, Vol 19, No 1, pp. 202-207, 2004.
153. "Laser Dressing of Vitrified Aluminum Oxide Grinding Wheels", Narendra B. Dahotre, A. Khangar, M. J. Jackson and G. M. Robinson, and R. Moss, **British Ceramic Transactions**, Vol. 102, No. 6, pp. 237-245, 2003.
154. "Micro-mechanical Properties of Laser Induced Iron Oxide-Aluminum Matrix Composite Coating", S. Nayak, L. Reister, H.M. Meyer, III, and Narendra B. Dahotre, **Journal of Materials Research**, Vol 18, No 4, pp. 833-839, 2003.
155. "Instrumented Indentation Characterization of Laser Induced Fe₃O₄/Al Composite Coating", S. Nayak and Narendra B. Dahotre, **Advanced Engineering Materials**, Vol. 5, No. 4, 2003.
156. "Effect of Processing Parameters on the Cohesive Strength of Laser Surface Engineered Ceramic Coatings on Aluminum Alloys", Puja Kadolkar and Narendra B. Dahotre, **Materials Science and Engineering: A**, Vol. 342, No. 1-2, pp. 183-191, 2003.
157. "Laser Surface Engineering", Narendra B. Dahotre, **Advanced Materials & Processing**, Vol. 160, No. 7, pp. 35-39, 2002.
158. "The Laser Induced Combustion Synthesis of Iron Oxide Nanocomposite Coating on Aluminum", S. Nayak and Narendra B. Dahotre, **Journal of Minerals, Metals and Materials (JOM) Society**, Vol. 54, No. 9, pp. 39-41, 2002
159. "Variation of Structure with Input Energy During Laser Surface Engineered Ceramic Coating on Aluminum Alloys", Puja Kadolkar and Narendra B. Dahotre, **Applied Surface Science**, Vol. 199, pp. 222-233, 2002.
160. "Tungsten Laser Surface Alloying of A356 Al Alloy: Tribological Performance and Characterization", M.H. Staia, C. Sanchez, M.R. Cruz, A. Roman, J. Lesage, G. Mesmacque, and Narendra B. Dahotre, **Surface Engineering**, Vol. 18, No. 4, pp. 270-276, 2002.
161. "High-Density Infrared Processing of WC/Ni-11P Cermet Coatings", P.G. Engleman, Narendra B. Dahotre, C.A. Blue, D.C. Harper, and R. Ott, **Surface Engineering**, Vol. 18, No. 2, pp. 113-119, 2002.
162. "High Temperature Oxidation of Laser Surface Engineered VC Coating on H13 Die Casting Die Steel", Narendra B. Dahotre and S. Shah, **Advanced Engineering Materials**, Vol. 3, No. 7, pp. 504-507, 2001.
163. "Microstructural and Tribological Characterization of Laser Engineered VC Coating on Tool/Die Steel", Swapnil Shah and Narendra B. Dahotre, **Materials and Manufacturing Processes**, Vol. 7, No. 1, pp.1-12, 2002
164. "Elastic Modulus Pulse Electrode Deposited Composite Boride Coating Using Nanoindentation", Arvind Agarwal, Narendra B. Dahotre, Laura Riester, and T. S. Sudarshan, **Surface Engineering**, Vol 17, No. 6, pp. 496-497, 2002.
165. "Laser Surface Engineered VC Coating for Extended Die Life", Swapnil V. Shah and Narendra B. Dahotre, **J. Materials Processing Technology**, No. 124, pp. 105-112, 2002.
166. "Evaluation of Laser Surface Engineered Iron Oxide Coatings on Cast Aluminum Alloy for Wear Application", A. Dasari, S. Nayak, R.D.K. Misra, O.O. Popoola and Narendra B. Dahotre, **Materials Science and Technology**, Vol. 18, pp. 1-18, 2002.
167. "Laser Assisted Iron Oxide Coating on Cast Al Alloy for Automotive Engine Application", Narendra B. Dahotre, S. Nayak, and Oludele O. Popoola, **Journal of Minerals, Metals and Materials (JOM) Society**, Vol. 53, No. 9, pp. 44-46, 2001.
168. "Wear Resistance of a Laser Alloyed A-356 Aluminum/WC Composite", M.H. Staia, M. Cruz, and Narendra B. Dahotre, **Wear**, Vol. 251, pp. 1459-1468, 2001.

169. "Refractory Ceramic Coatings: Processes, Systems, and Wettability and Adhesion", Narendra B. Dahotre, P. Kadolkar, and S. Shah, **Surface and Interface Analysis**, Vol. 31, pp. 659-672, 2001.
170. "Mechanism of High Temperature Oxidation of Laser Surface Engineered TiC/Al Composite Coating on 6061 Al.", Lalitha R. Katipelli and Narendra B. Dahotre, **Materials Science and Technology**, Vol. 17, No. 9, pp. 1061-1068, 2001.
171. "Deformation Behavior of Laser Surface Engineered Titanium Diboride Coating Under Uniaxial Tensile Stress", Arvind Agarwal and Narendra B. Dahotre, **Journal of Advanced Materials**, Vol. 33, No. 3, pp. 37-41, 2001.
172. "Mechanical Characterization of the Interface in Laser Surface Engineered Composite Titanium Diboride Coating on Steel", Arvind Agarwal and Narendra B. Dahotre, **Surface Engineering**, Vol. 17, No. 1, pp. 66-70, 2001.
173. "Microstructural and Tribological Characterization of an A-356 Aluminum Alloy Superficially Modified by Laser Alloying", M. H. Staia, M. Cruz, and Narendra B. Dahotre, **Thin Solid Films**, Vol. 377-378, No. 0, pp. 665-674, 2000.
174. "Surface Modification and Characterization of Functional Oxide Ceramics using CO₂ Laser", M. Okutomi, H. Nomura, T. Tsukamoto, Narendra B. Dahotre, and H. Shen, **Nuclear Instruments and Methods in Physics Research Section B**, Vol. 169, No. 1-4, p. 6-11, 2000.
175. "Interfacial Strength of Laser Surface Engineered TiC Coating on 6061 Al using Four-Point Bend Test", Lalitha R. Katipelli, Arvind Agarwal and Narendra B. Dahotre, **Materials Science and Engineering A**, Vol. A289, No. 1-2, pp. 34-40, 2000.
176. "Mechanical Properties of Laser Engineered Composite Boride Coating on Steel: A Nanoindentation Approach", Arvind Agarwal and Narendra B. Dahotre, **Metallurgical & Materials Transactions A**, Vol. 31A, pp. 401-407, 2000.
177. "Elevated Temperature Oxidation of Laser Engineered Composite Boride Coating on Steel", Arvind Agarwal and Narendra B. Dahotre, **Metallurgical and Materials Transactions A**, Vol. 31A, pp. 461-473, 2000.
178. "Laser Engineered Titanium Boride Coating", Arvind Agarwal and Narendra B. Dahotre, **Advanced Materials & Processes (AM&P)**, Vol. 156, No. 10, pp. 43-45 2000.
179. "Comparative Wear in Titanium Diboride Coatings on Steel Using High Energy Density Processes", Arvind Agarwal and Narendra B. Dahotre, **WEAR**, Vol. 240, No. 1-2, pp. 144-151, 2000.
180. "Neural Networks in Studies on Oxidation Behavior of Laser Surface Engineered Composite Boride Coating", Anuradha Godavarty, Arvind Agarwal, and Narendra B. Dahotre, **J. of Applied Surface Science**, Vol. 161, No. 1-2, pp. 129-136, 2000.
181. "In-situ Synthesis of Intermetallic and Ceramic Coatings using Pulse Electrode Surfacing", Arvind Agarwal and Narendra B. Dahotre, **Scripta MATERIALIA**, Vol. 42, No. 5, pp. 493-498, 2000.
182. "Wear Enhancement of Aluminum by Laser Surface Alloying with Silicon", M.H. McCay, N. Kennedy, J.H. Hopkins, and Narendra B. Dahotre, **Lasers in Engineering**, Vol. 10, No. 2, pp. 107-122, 2000.
183. "Functionality of Laser Surface Engineered Composite Titanium Diboride Coating", Arvind Agarwal and Narendra B. Dahotre, **J. Minerals, Metals, and Materials (JOM-e) Society**, Vol. 52, No. 1, 2000.
184. "Laser Surface Engineered TiC Coating on 6061 Al Alloy: Microstructure and Wear", Lalitha R. Katipelli, Arvind Agarwal and Narendra B. Dahotre, **Applied Surface Science**, Vol. 153, No. 2-3, p. 65, 1999.
185. "Evaluation of Laser Surface Engineered Boride Coating in Various Accelerated Corrosion and Oxidation

- Environments”, Arvind Agarwal and Narendra B. Dahotre, **Corrosion Prevention and Control**, Vol. 46, No. 5, pp. 111-121 and 132, 1999.
186. “The Influence of Metals and Carbides During Laser Surface Modification of Low Alloy Steel”, M.H. McCay, Narendra B. Dahotre, J.A. Hopkins, and T.D. McCay, **J. Materials Science**, Vol. 34, No. 23, pp. 5789-5802, 1999.
 187. “Refractory Ceramic Composite Coating via Laser Surface Engineering”, Narendra B. Dahotre and Arvind Agarwal, **J. Minerals, Metals, and Materials (JOM) Society**, vol. 51, No. 4, pp. 19-21, 1999.
 188. “Laser Deposited Titanium Diboride Coating for Protection of Molten Aluminum Handling Tools and Molds”, Arvind Agarwal and Narendra B. Dahotre, **J. Lasers in Engineering**, Vol. 9, pp. 169-193, 1999.
 189. “Pulsed Electrode Surfacing of Steel with TiC Coating: Microstructure and Wear Properties”, Arvind Agarwal and Narendra B. Dahotre, **J. Mater. Eng. & Performance**, Vol. 8, No. 4, pp. 479-486, 1999.
 190. “Laser Surface Engineering of Steel for Hard Refractory Ceramic Composite Coating”, Arvind Agarwal and Narendra B. Dahotre, **International Journal of Refractory Materials and Hard Metals**, Vol. 17, pp. 283-293, 1999.
 191. “Synthesis of Boride Coating on Steel using High Energy Density Processes: Comparative Study of Evolution of Microstructure”, Arvind Agarwal and Narendra B. Dahotre, **Journal of Materials Characterization**, Vol. 42, No.1, pp. 31-44, 1999.
 192. “Ceramic/Metal Interface in Laser Deposited Hard Refractory Composite Coating: Electron Microscopy Study”, Arvind Agarwal, Narendra B. Dahotre, and L.F. Allard, **Practical Metallography**, Vol. 36, No. 5, pp. 250-263, 1999.
 193. “Non-Vacuum Laser Deposition of Buffer Layers for Coated Conductors”, Narendra B. Dahotre, V. Semak, C. Xiao, and M.H. McCay, **J. of Thin Solid Films**, Vol. 340, pp. 77-86, 1999.
 194. “Formation of a Wear Resistant Surface on Al by Laser Aided In-situ Synthesis of MoSi₂”, Kunal Ghosh, M.H. McCay, and Narendra B. Dahotre, **Journal of Materials Processing Technology**, Vol. 88, pp. 169-179, 1999.
 195. “Evolution of Interface in Pulsed Electrode Deposited Titanium Diboride on Copper and Steel”, Arvind Agarwal, Narendra B. Dahotre, and T.S. Sudarshan, **Surface Engineering**, Vol. 1, No. 1, pp. 27-32, 1999.
 196. “The Influences of Metals and Carbides During Laser Surface Modification of Low Alloy Steel”, M.H. McCay, Narendra B. Dahotre, J.A. Hopkins, T.D. McCay, and M.A. Riley, **J. Mater. Sci.**, Vol 34, NO 23, pp. 5789-5802, 1999.
 197. “Pulse Electrode Deposition of Superhard Boride Coatings on Ferrous Alloy”, Arvind Agarwal, and Narendra B. Dahotre, **Surface Coatings and Technologies**, Vol. 106, Issue 2-3, pp. 242-250, 1998.
 198. “Laser Induced Reaction Coating of Ceramic on Ceramic Composite for Enhanced High Temperature Corrosion Resistance”, Narendra B. Dahotre, C. Xiao, W. Boss, M.H. McCay, and T. D. McCay, **Transactions of the Metal Finishers’ Association of India**, Vol.7, No.1, pp7-22, 1998.
 199. “Diffusion Bonding of Laser Surface Melted Ni-alloy Material”, W.Reitz, and Narendra B. Dahotre, **Materials and Manufacturing Processes**, Vol.13, No.1, pp.1-14, 1998.
 200. “Structural and Hardness Studies of CN_x/TiN Composite Coatings on Si(100) Substrate by Laser Ablation Method”, A. Kumar, H. L. Chan, and Narendra B. Dahotre, **J. Materials Engineering and Performance**, Vol.6, No.5, pp. 577-582, 1997.
 201. “Laser Ablation Synthesis and Characterization of Nitride Coatings”, A. Kumar, H. L. Chan, U. Ekanayake, A. Wierzbicki, Narendra B. Dahotre, and S. C.Sikes, **J. Materials Engineering and Performance**, Vol.6, No.5, pp. 583-585, 1997.

202. "Evolution of Microstructure in BaTiO₃ Thin Films Recrystallised by Laser", M.Okutomi, T. Tsukamoto, S. Niki, and Narendra B. Dahotre, **Surface Engineering**, Vol. 13, No. 1, pp. 66-70, 1997.
203. "Effect of Particulate Loading on Heat and Mass Transfer during Laser Welding of Metal Matrix Composites", Mary Helen McCay, T. Dwayne McCay, Narendra B. Dahotre, and C. Michael Sharp, **J. Materials Processing & Manufacturing Science**, Vol.2, pp.261-272, January 1994.
204. "Evaluation of Microstructure in BaTiO₃ Thin Films Recrystallized by Laser", M.Okutomi, T. Tsukamoto, S. Niki, and Narendra B. Dahotre, **Surface Engineering**, Vol.13, No.1, pp. 66-70, 1997.
205. "High Temperature Ceramic Coating of Ceramic by Laser In-Situ Reaction Technique", Narendra B. Dahotre, C. Xiao, W. Boss, M.H. McCay, and T.D. McCay, **J. Minerals, Metals and Materials (JOM) Society**, Vol.47, No.10, pp.51-53, 1995.
206. "Laser Induced Liquid Phase Reaction Synthesis Assisted Joining of Metal Matrix Composite", Narendra B. Dahotre, M.H. McCay and T. Dwayne McCay, **Materials and Manufacturing Processes**, Vol.9, No.3, pp.447-466, 1994.
207. "Diamond Materials for Electromagnetic Railguns", Narendra B. Dahotre, Mary Helen McCay and T. Dwayne McCay, **Materials and Manufacturing Processes**, Vol.9, No.1, pp. 1-36, 1994.
208. "Effect of Grain Structure on Phase Transformation Events in the Inconel 718", Narendra B. Dahotre, Mary Helen McCay, T. Dwayne McCay, Camden R. Hubbard, Wallace D. Porter and O.B. Cavin, **Scripta Metallurgica et Materialia**, Vol.28, No.11, pp. 1359-1364, 1993.
209. "Laser Transformation of Pb-Sb, Pb-Ca and Pb-Sb-Sn-As Alloys", Narendra B. Dahotre, M. H. McCay, T. D. McCay and M. M. Kim, **J. Materials Science**, Vol.27, pp. 6426-6436, 1992.
210. "Gas Assisted Heat Transfer Effects in Laser Welding Inconel 718", M.H. McCay, T.D. McCay, Narendra B. Dahotre, and C.M. Sharp, **Joining Sciences**, Vol.1, No.3, pp. 145-152, 1992.
211. "Laser Treatment of Lead-Alloys for Battery Grid", Narendra B. Dahotre, Mary Helen McCay, T. Dwayne McCay and C. Michael Sharp, in the **Industrial Laser Handbook-1992**, Eds: D. Belforte and M. Levitt, Springer-Verlag Publication, Sturbridge, MA, pp.123-131, 1992.
212. "Fusion Zone Structures in Laser Welded Al-SiC Composites", M. H. McCay, T. D. McCay, Narendra B. Dahotre and C. M. Sharp, **J. of Laser Applications**, Vol. 3, No. 3, 1991.
213. "Pulse Laser Processing of a SiC/Al-Alloy Metal Matrix Composite", Narendra B. Dahotre, Mary Helen McCay, T. D. McCay, S. Gopinathan and Lawrence F. Allard, **Journal of Materials Research**, Vol. 6, No. 3, pp. 514-529, 1991.
214. "Laser Surface Modification of Zinc-Base Composites", Narendra B. Dahotre, T. Dwayne McCay and Mary Helen McCay, **Journal of Metals** , Vol.42, No.6, pp. 44-47. 1990.
215. "Development of Microstructure in Laser Surface Alloying of Steel with Chromium", Narendra B. Dahotre and K. Mukherjee, **Journal of Materials Science**, Vol.25, pp.445-454, 1990.
216. "Laser Processing of SiC/Al-Alloy Metal Matrix Composite (MMC)", Narendra B. Dahotre, T. Dwayne McCay and Mary Helen McCay, **Journal of Applied Physics**, Vol.65, No.12, pp.5072-5077, 1989.
217. "Shear Band Formation and Cracking of a Metallic Glass Irradiated with High Energy Laser Pulses", K. Mukherjee, Narendra B. Dahotre and C. Wakade, **J Materials Science**, Vol.22, pp. 601-606, 1987.
218. "Laser Surface of W2 Tool Steel: Effects of Prior Heat Treatment", Narendra B. Dahotre, Ann Hunter and K. Mukherjee, **Journal of Materials Science**, Vol.22, pp.403-406, 1987.
219. "Damage in Aluminum, Zinc and Tin from a Nanosecond Electric Pulse Discharge", C. Wakade, Narendra

Reviewed Publications in Conference Proceedings

1. "Laser Coating of Aluminum Alloy EN AW-6082-T651 with TiB₂/TiC/Al", Dunja Ranvikar, Narendra B. Dahotre, and Janez Grum, Proceedings of 2nd Mediterranean Conference & New Challenges on Heat Treatment and Surface Engineering, Eds. B. Smoljan and B. Matijcic, Coartian Society for Heat Treatment and Surface Engineering, Zagreb, Croatia, pp. 113-119, 2013.
2. "Laser Machining of Alumina: Experimental and Numerical Approach for Surface Finish", Hitesh D.Vora, Sameer R. Paital, Sandip P. Harimkar, Sandra K.S. Boetcher, Narendra B. Dahotre, **Advances in Manufacturing Technologies**, Materials Science and Technology (MS&T) 2011, TMS, Warrendale, PA, pp.1493-1500, 2011.
3. "Laser Surface Alloying of a Creep Resistant Magnesium Alloy MRI 230D with Al and Al₂O₃", G. Rapheal, S. Kumar, C. Blawert, and Narendra B. Dahotre, **Magnesium Technology 2010**, Ed: Sean R. Agnew, Neal Neelameggham, Eric A. Nyberg, Wim H. Sillekens, TMS, 2010.
4. "A Novel Approach of Laser Surface Dressing of Alumina Ceramic", S.P. Harimkar and N.B. Dahotre, **Proc. 1st Int. Cong. on Ceramics: A Global Roadmap**, June 25-29 (2006), Toronto, Canada.
5. "Finite Element Analysis of Laser Induced Surface Improvement of Al Alloys With Tic," Lino Costa, William Hofmeister, Narendra Dahotre, Proceedings of the International PowderMet2006 Conference, San Diego, June 19-21, 2006. MPIF, X, X, 2006 Advanced in PM&PM Proceedings of the 2006 International Science, San Diego, CA (MPIF, Princeton, NJ, 2006).
6. Laser Surface Engineering of Alumina Ceramic Compacts: An Approach of Laser Dressing, S.P. Harimkar and N.B. Dahotre, **Proceedings of Materials Science and Technology-2006 (MS&T'06)**, October 15-19 (2006), Cincinnati, USA. pp. 239-245.
7. "Laser Induced In-situ Synthesis of Ultrafine Carbide Composite Coating", Anshul Singh and Narendra B. Dahotre, **Surfaces and interfaces in Nanostructured Materials**, Eds: S.M. Mukhopadhyay, S. Seal, Narendra B. Dahotre, A. Agarwal, J.E. Smugeresky, and N. Moody, The Metallurgical Society of AIME, Warrendale, PA, pp. 137-142, 2004
8. "Laser Induced Carbide Coating on Steel", Anshul Singh and Narendra B Dahotre, **Heat Treat and Surface Engineering**, Eds. Narendra B. Dahotre, R.J. Gaster, R.A. Hill, and Oludele Popoola, ASM International, Materials Park, OH, pp. 427-430, December 2003
9. "Laser Dressing of alumina Grinding Wheels", Abhijeet Khangar and Narendra B. Dahotre, **Heat Treat and Surface Engineering**, Eds. Narendra B. Dahotre, R.J. Gaster, R.A. Hill, and Oludele Popoola, ASM International, Materials Park, OH, pp. 423-426, December 2004.
10. "Laser-Assisted Surface Modification of 4340 Steel with Iron Aluminum Alloys", G. Muralidharan, P.G Engleman, C.A. Blue, V. K. Sikka, A.K Singh, A Khangar and Narendra B Dahotre, **Proceedings of Materials Research Society (MRS) Symposium**, Vol. 750, 2003.
11. "Laser Induced Surface Modification in A319 Al Alloy", S. Nayak and Narendra B. Dahotre, **Materials Science Forum**, Eds: T. Chandra, Jose M. Torralba, and T. Sakai, Trans Tech Publications, Switzerland, Vols. 426-432, pp. 2443-48, 2003.
12. "Residual Stress Characterization of Particulate Reinforced Composite Coating Using X-ray Diffraction Technique", P. B. Kadolkar, Narendra B. Dahotre, and T.R. Watkins, **Surface Engineering: Coatings and Heat Treatments**, Eds. O.O. Popoola, Narendra B. Dahotre, S. Midea, H. Kopech, ASM International, Materials Park, pp. 593-602, 2003.
13. "Microstructural Characterization of laser Induced Iron Oxide-Aluminum Reaction Coating", S. Nayak, Narendra B. Dahotre, H.M. Meyers III, and O.O. Popoola, **Surface Engineering: Coatings and Heat**

- Treatments**, Eds. O.O. Popoola, Narendra B. Dahotre, S. Midea, H. Kopech, ASM International, Materials Park, pp. 206-211, 2003.
14. "Nanoindentation Characterization of Laser Engineered Iron Oxide Coating on A319Al", Narendra B. Dahotre, S. Nayak, O.O. Popoola and L. Reister, **Surface Engineering: Coatings and Heat Treatments**, Eds. O.O. Popoola, Narendra B. Dahotre, S. Midea, H. Kopech, ASM International, Materials Park, pp. 212-215, 2003.
 15. "Thermal Measurements During Laser Surface Engineering Using Infrared Thermography", P. B. Kadolkar, Narendra B. Dahotre, H. Wang, and T.R. Watkins, **Surface Engineering: Coatings and Heat Treatments**, Eds. O.O. Popoola, Narendra B. Dahotre, S. Midea, H. Kopech, ASM International, Materials Park, pp. 229-236, 2003.
 16. "Aluminum Based Nanostructured Composite Coatings: Processing, Microstructure and Wear Behavior", A. Agarwal, K. Rea, S. Wannaparhun, S. Seal, Narendra B. Dahotre, and T. McKechnie, **Surface Engineering in Materials Science II**, Eds. S. Seal, N.B. Dahotre, J.J. Moore, C. Suryanarayana, and A. Agarwal, The Metallurgical Society of AIME, Warrendale, PA, pp. 81-90, 2003.
 17. "High Temperature Oxidation of VC Coated H13 Steel", Swapnil Shah and Narendra B. Dahotre, **Elevated Temperature Coatings: Science and Technology-IV**, Eds. Narendra B. Dahotre, Janet M. Hampikian and John E. Morral, The Metallurgical Society of AIME, Warrendale, PA, pp. 291-300, 2001.
 18. "Oxidation Kinetics and Morphology of Laser Surface Engineered Hard Coating on Aluminum", Narendra B. Dahotre and Lalitha R. Katipelli, **Elevated Temperature Coatings: Science and Technology-IV**, Eds. Narendra B. Dahotre, Janet M. Hampikian and John E. Morral, The Metallurgical Society of AIME, Warrendale, PA, pp. 219-232, 2001.
 19. "Wear Resistance of Laser Alloyed ZrB₂ Coatings on Mild Steel", A. Gadkari, A.S. Khanna, and Narendra B. Dahotre, **ASM International, Thermal Spray: Surface Engineering via Applied Research (USA)**, pp. 999-1004, May 2000.
 20. "Accelerated Liquid Metal Corrosion of Laser Surface Engineered VC Coatings on Structural Steel", Swapnil Shah, Lalitha R. Katipelli, Arvind Agarwal, Narendra B. Dahotre, **Surface Engineering: In Materials Science I**, Eds. S. Seal, Narendra B. Dahotre, J.J. Moore, and B. Mishra, The Metallurgical Society of AIME, Warrendale, PA, p. 311-322, 2000.
 21. "Oxidation and Wear Performance of Laser Surface Engineered TiC Coating on 6061 Al", Lalitha R. Katipelli, Arvind Agarwal, Narendra B. Dahotre, **Surface Engineering: In Materials Science I**, Eds. S. Seal, Narendra B. Dahotre, J.J. Moore, and B. Mishra, The Metallurgical Society of AIME, Warrendale, PA, p. 323-334, 2000.
 22. "The Effect of Chromium and CrB₂ Additions on the Formation of Borides During Laser Surface Modification of Steel", M. H. McCay, J. A. Hopkins, and Narendra B. Dahotre, **Surface Engineering: In Materials Science I**, Eds. S. Seal, Narendra B. Dahotre, J.J. Moore, and B. Mishra, The Metallurgical Society of AIME, Warrendale, PA, p. 385-394, 2000.
 23. "Effect of Deposition Temperature on the Physico-Chemical Behavior of Ti-Al-N Thin Films", S. Seal, A. Kale, V. Desai, D. Jimenez, K. Sundaram, Narendra B. Dahotre, and S. Shah, **Surface Engineering: In Materials Science I**, Eds. S. Seal, Narendra B. Dahotre, J.J. Moore, and B. Mishra, The Metallurgical Society of AIME, Warrendale, PA, pp. 403-413, 2000.
 24. "Characterization and Tribological behavior of Composite Boride Coating Deposited on Steel using Laser Surface Engineering", Arvind Agarwal and Narendra B. Dahotre, **Elevated Temperature Coatings: Science and Technology-III**, Eds. J. Hampikian and Narendra B. Dahotre, The Metallurgical Society of AIME, Warrendale, PA, pp. 273-284, 1999.
 25. "Laser Surface Alloying of Aluminum with Refractory Materials", Narendra B. Dahotre, L.P. Efimenko, and I.G. Poljakova, **Heat Resistant Functional Coatings**, St. Petersburg, Russia, Vol. 1, pp.135-143, 1997.

26. "Characterization of Titanium Diboride Coating Deposited on Metals Using Pulse Electrode Surfacing (PES) Technique", Arvind Agarwal, Narendra B. Dahotre, T.S. Sudarshan, **Proc. Surface Modification Technologies XI**, Eds: T.S. Sudarshan, M. Jeandin, and K.A. Khor, Inst. Materials, London, UK, 1997
27. "Evolution of Microstructure and Mechanical Properties in Laser Induced Reaction Coating of Al₂O₃ in SiC/Al₂O₃ Composite", Narendra B. Dahotre, C. Xiao, W. Boss, M.H. McCay, and T.D. McCay, in **Elevated Temperature Coatings: Science and Technology-II**, Eds. Narendra B. Dahotre and J. Hampikian, The Metallurgical Society of AIME, Warrendale, PA, pp. 441-452, 1996.
28. "Laser Induced Surface Modification of Ceramic Coated Ceramic Composite for High Temperature Corrosion Protection", Narendra B. Dahotre, C. Xiao, W. Boss, M.H. McCay, and T.D. McCay, in **Elevated Temperature Coatings: Science and Technology-I**, Eds. N.B. Dahotre, J. Hampikian and J.J. Stiglich, The Metallurgical Society of AIME, Warrendale, PA, pp. 113-123, 1995.
29. "Laser Induced Reaction Coatings of Ceramics", Narendra B. Dahotre, C. Xiao, W. Boss, M.H. McCay, and T.D. McCay, in **Surface Modification Technologies VIII**, Eds. T.S. Sudarshan and M. Jeandin, The Institute of Materials, London, UK, pp. 310-319, 1995.
30. "Evaluation of a Candidate Material for a Coal-Fired Magnetohydrodynamic (MHD) High Temperature Recuperative Air Heater", J. Winkler, Narendra B. Dahotre and W. Boss, **Proceedings of 17th Annual Conference on Composites and Advanced Ceramics**, Eds: D. C. Cranmer and J. Buckley, American Ceramic Society, Westerville, Oh, 1993.
31. "Laser Joining of Metal Matrix Composites", Narendra B. Dahotre, M. H. McCay, T. D. McCay, S. Gopinathan and C. M. Sharp, in **Machining of Composite Materials**, Eds: T. S. Srivatsan and D. Bowden, ASM International, Metals Park, Ohio, 1992.
32. "Effect of Pulse Duty Cycle on Laser Welding of Inconel 718," M. H. McCay, T. D. McCay, Narendra B. Dahotre, C. M. Sharp, A. Sedghinasab and S. Gopinathan, in **The Use of Lasers in Manufacturing, SP-794, (1989)** 57-65 Proceeding of SAE Conf. on Advanced Manufacturing Techniques, Anaheim, California, Sept. 1989.
33. "Micromechanism of High Speed Abrasive Waterjet Cutting of Cast Metal Matrix Composites", P. K. Rohatgi, Narendra B. Dahotre, S. G. Gopinathan, D. Alberts and K. F. Neusen, in **Proceedings of International Symp. on Advances In Cast Reinforced Metal Composites**, Eds: S. G. Fishman and A. K. Dhingra, ASM International, pp. 391-397, 1988.
34. "Wear Behavior of Flake Graphite and Microcrystalline Carbon Dispersed Al-Matrix Composites", P.K. Rohatgi, Narendra B. Dahotre, Y. Liu and T.L. Barr, in **Proc. Intl. Conf. on Engineered Materials for Advanced Friction and Wear Applications**, , Eds: F. A. Smidt and P. J. Blau, ASM International, Materials park, Ohio, pp. 85-92, 1988.
35. "Wear Behavior of Al and Al-Si-Cu Alloys", P. K. Rohatgi, Narendra B. Dahotre, Y Liu and T. L. Barr, in **Proceedings of Conf. on Wear Resistance of Metals and Alloys**, Ed: G. R. Kingsbury, ASM International, pp. 47-57, 1988.
36. "Behavior of Al Alloy-Graphite and Al Alloy-Microcrystalline Carbon Particle Composites", P. K. Rohatgi, Narendra B. Dahotre, Y. Liu, M. Lin and T. L. Barr in **Proceedings of Conf. on Cast Reinforced Metal Composites**, Eds: S. G. Fishman and A. K. Dhingra, ASM International, pp. 367-373, 1988.

Publications in Conference Proceedings

1. "Laser Surface Engineered Hard Coating on Aluminum", Lalitha R. Katipelli and Narendra B. Dahotre, **New Materials & Development Processes**, Ed. David Roessler, Global Powertrain Congress, Ltd., Detroit, MI, pp. 42-53, 2000.
2. "Laser Induced Reaction Bonding of High Temperature Structural Ceramics", Narendra B. Dahotre, M.H. McCay and T. Dwayne McCay, in the **Proceedings of International Congress on Applications of**

- Lasers and Electro-Optics (ICALEO'94)**, Laser Institute of America, Orlando, FL, pp.105-15, 1995.
3. "Carbide Formation During Laser Welding of SiC/Aluminum Composites", S. Gopinathan, Narendra B. Dahotre, Mary Helen McCay and T. Dwayne McCay, **Laser Materials Processing, Proceedings of ICALEO'93**, Orlando, FL, LIA Volume 73, 1993.
 4. "Laser Induced Reaction Joining of Metal Matrix Composite", Narendra B. Dahotre, T. Dwayne McCay and Mary Helen McCay, **Laser Materials Processing, Proceedings of ICALEO'93**, Orlando, FL, LIA Volume 73, 1993.
 5. "Laser Welding Techniques for Alloy 718", M. H. McCay, T. D. McCay, C. M. Sharp and Narendra B. Dahotre, **Superalloys 718, 625 and Various Derivatives**, Ed. E. A. Loria, The Minerals, Metals and Society, Warrendale, PA, pp. 719-734, 1991.
 6. "An Evaluation of Strength of Pulsed Laser Welded SiC Particulates Reinforced Al-Alloy Metal Matrix Composite", Narendra B. Dahotre, Santosh Gopinathan, Mary H. McCay, T. Dwayne McCay and C. Michael Sharp, in **Light Weight Alloys for Aerospace Applications II**, Eds: E. W. Lee and N. J. Kim, The Metallurgical Society of AIME, Warrendale, PA, pp. 313-326, 1991.
 7. "Laser Welding of a SiC/Al-alloy Metal Matrix Composite", Narendra B. Dahotre, M. H. McCay, T. D. McCay, C. M. Sharp, S. Gopinathan and L. F. Allard, **Laser Materials Processing, Proceedings of ICALEO'91**, Orlando, LIA Volume 71, pp. 343-356, 1991.
 8. "The Effect of Laser Pulse Tailored Welding on Inconel 718", M. H. McCay, C. M. Sharp, M. G. Womack, T. D. McCay and Narendra B. Dahotre, **Laser Materials Processing, Proceedings of ICALEO'91**, Volume 71, Orlando, FL, pp. 325-342, 1991.
 9. "Gas Assisted Heat Transfer Effects in Laser Welding Inconel 718", M. H. McCay, T. D. McCay, C. M. Sharp and Narendra B. Dahotre, **Proceedings of XXII International Conference on Heat and Mass Transfer**, Dubrovnik, Yugoslavia, August 1990.
 10. "Laser Pulse Welding of Inconel 718", M. H. McCay, T. D. McCay, Narendra B. Dahotre, C. M. Sharp, A. Sedghinasab and S. Gopinathan, **Laser Processing**, Proceedings of ICALEO, Orlando, FL, LIA Volume 69, p.229, Oct. 1989.
 11. "Laser Surface Melting and Alloying of Steel with Chromium", Narendra B. Dahotre and K. Mukherjee, in **Laser Materials Processing III**, Eds: K. Mukherjee and J. Mazumder, The Metallurgical Society of AIME, Warrendale, PA, 1989.
 12. "Some Aspects of the Microstructure, Defects and Diffusion in Laser Surface Alloying of Steel", Narendra B. Dahotre, F. Fink and K. Mukherjee, in SPIE Vol. 668, **Laser Processing: Fundamentals, Applications Systems Engineering**, the Society of Photo-Optical Instrumentation Engineers, Bellingham, WA 98227, pp.134-144, 1986.
 13. "Pulse Laser Induced Shear Band Formation In Metallic Glass", K. Mukherjee, C. Wakade and Narendra B. Dahotre, in **Laser Processing of Materials** Eds: K. Mukherjee and J. Mazumder, The Metallurgical Society AIME, Warrendale, PA, pp.141-158. 1985.
 14. "Laser Melting and Microstructure of Metallic Glass", Narendra B. Dahotre, C. Wakade and K. Mukherjee, in **Laser Processing of Materials**, Eds: K. Mukherjee and J. Mazumder, The Metallurgical Society of AIME, Warrendale, PA, pp.101-115, 1985.