CURRICULUM VITAE

GHATU SUBHASH, PhD
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Mechanical and Aerospace Engineering
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Educational Training

Post-Doc	California Institute of Technology, Pasadena, CA	Jan 1992-Feb 1993
Ph.D.	University of California San Diego, La Jolla, CA	June 1992
M.S.	University of California, San Diego, La Jolla, CA	February 1989
B.E.	Karnataka Regional Engineering College, Suratkal, India	July 1984

Employment and Professional Experience

12/06-current	Professor, Mechanical and Aerospace Engineering (MAE), University of Florida (UF), Gainesville, FL.
09/10- current	Adjunct Professor, Materials Science and Engineering, UF, Gainesville, FL.
5/02-12/06	*Professor,* Department of Mechanical Engineering-Engineering Mechanics (ME-EM), Michigan Technological University (Michigan Tech)
8/04-7/06	*Associate Chair and Director of Graduate Studies*, ME-EM Department, Michigan Tech.
09/03-05/04	Sabbatical leave at Sandia National Laboratories, Albuquerque, NM
9/97-5/02	*Associate Professor,* ME-EM Department, Michigan Technological University
9/99-12/01	Director of Solid Mechanics Area, ME-EM Department, Michigan Tech.
3/93- 8/97	*Assistant Professor*, ME-EM Department, Michigan Tech.
1/92-2/93	*Post-Doctoral Research Fellow*, California Institute of Technology, Pasadena.
7/90-12/92	*Industrial Fellow and Research Assistant,* University of California San Diego.
7/87-6/90	*Graduate Research Assistant,* University of California San Diego.
8/84-6/87	*Research Engineer,* Bharat Heavy Electrical Ltd., Hyderabad, India.

Honors and Awards

'2018 Frocht Award', Society for Experimental Mechanics (SEM) - in recognition of outstanding achievements as an educator. The award recognizes the ***Experimental Mechanics Educator of the Year*** and is in recognition of the technical stature and the high personal regard in which the awardee is held by the experimental mechanics community

National Academies of Engineering, Science and Medicine Panel member for 'Ballistic Science and Engineering' at the Army Research Laboratories, National Research Council - 2015-2019; served on three panels in 2015, 2017 and 2018.

Appeared in a PBS documentary "Secrets of Spanish Florida" - aired nationwide on Dec 26, 2017 (9-11pm) while discussing the impact response of Coquina, the material with which the oldest fort in USA, Castillo de San Marcos, in St. Augustine was built.

Orr 'Best Paper' Award, ASME - Journal of Engineering Materials and Technology (Nov 2016)

'Technology Innovator Award' - University of Florida *(2014 and 2016).*

'College of Engineering Doctoral Dissertation Advisor/Mentoring Award' University of Florida (2015-16)

'Significant Contribution Award' for development of rapid processing method for ceramic fuel pellets**,** Materials Science and Technology Division (MSTD), American Nuclear Society (2014)

'Member-at-Large' Society of Experimental Mechanics Executive Board (2015-2017)

'Fellow of SEM' Society of Experimental Mechanics, for "Contributions to the field of mechanics and materials through fundamental experimental and theoretical investigations for high strain rate, multi-

axial response of novel materials, including fracture under extreme environmental conditions, to increase understanding of material behavior." (June 2015)

'*Fellow of ASME'* for exceptional engineering achievements and contributions to the engineering profession (2004).

Presented "Research potential on Ceramic Materials and Novel Helmet Designs" to the staff of US Senators Mr. Bill Nelson and Mr. Marco Rubio, and Congressman Mr. Crenshaw at US Capitol (Oct 2014)

'University of Florida Research Foundation Professor', University of Florida *(2013-2016)*

'Teacher/Scholar of the Year' College of Engineering, University of Florida (2013)

'Researcher of the Year' Mechanical and Aerospace Engineering, University of Florida (2011)

'Second Prize – Best Paper Award' 32nd International Conference on Advanced Ceramics & Composites, American Ceramic Society (2008)

'Knox T. Millsaps Professor' MAE Department, University of Florida (2008-2014)

'MTU Research Award' Michigan Tech, for excellence in research (2005)

'ASME *Student Section Advisor Award*', ASME, for initiating numerous activities to promote ASME, enhance the art and science of mechanical engineering, and strengthen the camaraderie and professionalism between students and faculty (2003).

'SAE Ralph R. Teetor Educational Award', in recognition of significant contributions to Teaching, Research and Student Development, Society of Automotive Engineers (2000).

'Who's Who Among America's Teachers', (8^{th} edition, 2004, 6th edition-2000, 5th Edition-1998, 4th Edition-1996).

Inductee - 'Academy of Teaching Excellence', Michigan Tech (1998).

Finalist for the 'Distinguish Teaching Award' in Associate/Full Professor Category (1998)

'ASEE Outstanding New Mechanics Educator' American Society for Engineering Education (1996).

Only Nominee by the President of MTU for The Carnegie Foundation for the Advancement of Teaching *"U.S. Professors of the Year"* program, in (1996 -99).

'A Distinguished Faculty Member' for extraordinary contributions to Michigan Higher Education, Michigan Association of Governing Boards of State Universities, (1995).

'Commendation Letters' from the Governor (Mr. John Engler) and the *Michigan Legislature*, (1995).

'Distinguished Teaching Award,' in recognition of inspirational guidance, genuine interest in students, and scholarly leadership, Michigan Technological University, (1994).

'Certificate of Recognition' for outstanding performance in research, Center of Excellence for Advanced Materials, University of California, San Diego (UCSD), (1989 and 1991).

'Industrial Fellow of the Center of Excellence for Advanced Materials', UCSD, (1990-91).

Courses Taught

High Strain Rate Behavior of Materials, Elasticity, Experimental Stress Analysis, Senior Capstone Design Projects, Failure of Materials in Mechanical Design, Mechanics of Materials, Intermediate Mechanics of Materials, Advanced Mechanics of Materials, Mechanics of Materials Laboratory, and Mechanical Engineering Design

Research Interests

Microstructural characterization of deformation modes and fracture behavior of structural ceramics, ultrahard materials, biomaterials, gels, transparent materials, ultrahigh temperature materials, nuclear materials, metallic glasses, 3D woven composites, structural foams, nanostructured materials, plastically graded materials (case hardened steels), and refractory metals

Theoretical and computational Raman spectroscopy of ceramics

Processing-structure-property relationships in ultrahard ceramics, transitional metal diborides, and enhanced accident-tolerant high thermal conductivity nuclear ceramic fuels

Fundamental investigations into high strain rate multiaxial response of novel materials including brain tissue, biomaterials and gels, and development of pressure-deformation-injury maps

Development of novel test methods and experimental solid mechanics
Rolling contact fatigue (RCF) of ultrahard bearing steels (M50, M50 NiL and P675)

Professional Activities

Affiliations (Membership)

- ASME (Fellow); SEM (Fellow)
- Member of The American Ceramic Society (ACerS) and The Metals, Minerals and Materials Society (TMS) and Society of Engineering Science (SES)
- Past member of ASEE and SAE
- Secretary of Experimental Mechanics (Springer) International Advisory Board (2017-Current)

Editorships

- Editor-in-Chief - Mechanics of Materials (Jan 2019- Current)
- Associate Editor - Journal of the American Ceramic Society (2006- current)
- Associate Editor - Experimental Mechanics Journal (Jan 2014-2017)
- Associate Editor - ASME Journal of Engineering Materials and Technology (Jan 2014-Current)
- Associate Editor - Mechanics of Materials (July 2008- Dec 2018)
- Associate Editor – Journal of Dynamic Behavior of Materials (2014-2016)
- Guest Editor- Special Issue of *Experimental Mechanics'* on Transparent Armor Materials (Jan 2013)
- Co-Editor- Special Issue of *Mechanics of Materials* on Deformation, Fracture and Failure of Advanced Materials, Honoring Prof. Sia Nemat-Nasser on his 65th Birthday, H.D. Espinosa and G. Subhash, Vol 35 [3-6] (2003)
- Guest Editor- Special Issue of *Experimental Mechanics* Honoring Prof. Ravichandran on his 60th Birthday, Ghatu Subhash, Samantha Daly and Christian Franck (to in appear June 2019)

Activities

- Sosman Award Committee member, Basic Science Division, American Ceramic Society (2016-current)
- Secretary - Experimental Mechanics International Advisory Board (2017-current)
- Session Organizer for the "Armor Ceramics" symposium at the International Conference on Advanced Ceramics and Composites (ICACC 2020), Daytona Beach, FL Jan 26-30, 2020.
- Session Organizer for the "Armor Ceramics" symposium at the International Conference on Advanced Ceramics and Composites (ICACC 2019), Daytona Beach, FL Jan 27-31, 2019.
- Organizer and Sesson Chair for "Experimental and Computation Characterization of Dynamic Behavior of Advanced Ceramic" Mach Conference, Apr 3-5, 2019, Annapolis, MD
- Session Chair for the Sessions on "Composite Materials| Advanced Ceramic Materials" 4th International Conference and Expo on Ceramics and Composite Materials, May 14-15, 2018, Rome, Italy.
- Session Organizer and Chair, "Experimental and Computational Advances in Ceramics", Mach Conference, Apr 4-6, 2018 Annapolis, MD
- Session Organizer for the "Armor Ceramics" symposium at the International Conference on Advanced Ceramics and Composites (ICACC 2018), Daytona Beach, FL Jan 21-26, 2018.
- Session Chair for "T09-Boron Based Ceramics" 15th Conference and Exhibition of the European Ceramic Society (ECerS), Budapest, Hungary, July 9-13, 2017
- Chair- SEM 75th anniversary celebration committee, Society for Experimental Mechanics, June 2018
- Executive Committee- Society for Experimental Mechanics, 2015-17
- Scientific Advisory Board and Session Organizer – 17th International Conference on Experimental Mechanics, Rhodes, Greece, July 3-7, 2016.

- Session Organizer for the "Armor Ceramics" symposium at the International Conference on Advanced Ceramics and Composites (ICACC 2017), Daytona Beach, FL Jan 23-27, 2017.
- Co-Chaired a session on "Field Assisted Sintering I : Sintering and Related Powder Processing Science & Technologies" Materials Science & Technology (MS&T 2016), Salt Lake City, Utah, Oct 23-27, 2016
- Scientific Committee - Mach Conference, Annapolis, MD (2014-2017)
- Chair (Track 2(2)) at the 2014 Water Reactor Fuel Performance Meeting/Top Fuel/LWR Fuel Performance Meeting, 14-17 September 2014, Sendai, Japan
- Organizer- Eringen Medal symposium in honor of Prof. Ravichandran, SES conference, Brown University, Providence, RI (June 2013)
- Chair: Dynamics of Fibers, Glasses and Composites, Apr 9-12, 2013, Mach Conference, Westin Hotel, Annapolis, MD
- Session Chair: Modeling and Experiments in NanoMechanics and NanoMaterials, ASME-IMECE, Denver-Colorado, Nov 16, 2011
- Chair: ASME-Dynamic Behavior of Materials Committee (June 2008- Nov 2010)
- Secretary: ASME-Dynamic Behavior of Materials Committee (2006- June 2008)
- Session Developer and Chair "Dynamic Response of Transparent Materials" SEM annual conference, Unconsville, CT, June 2011
- Session Developer and Chair, "Dynamic Response of Heterogeneous Materials" ASME-IMECE09, November 15-19, 2009, Orlando, FL
- Symposium Organizer and Chair, "Blast and fragmentation" (26 papers) Organized at the ASME Congress and Exposition, November 11-17, 2007, Seattle, WA
- Faculty Advisor for MTU-ASME Student Chapter, 1998-2002. Activities include:
    - Incorporated ASME design projects into the senior 'Capstone Design'. The team won 'ASME Design Contest' ASME Regional Student Conference held at University of Wisconsin, Madison. The objective was to design a fishing apparatus for quadriplegics using 'Sip and Puff Technology'. The two teams from MTU won **FIRST and THIRD** places among seven teams. The first placed team also competed at the ASME Congress in November, 2001 in New York. Two more design projects on "**Baseball Frenzy'** (to design and build a baseball throwing machine that separates good balls from the bad ones) were introduced in 2001/02. One of the teams secured **SECOND** place at the ASME regional meeting in Kentucky in March 2002.
    - In 2001-02 '**Human Powered Vehicle'** (HPV) was introduced in Senior Capstone Design. The teams designed and built an HPV and competed along with 20 other teams in April 2002 in Reno, NV. Michigan Tech secured **First** place for design and innovation and **Second** place in Utility competition. In 2002-03, a new team consisting of ME Seniors won 1st place for Design in UC Davis, CA.
- Co-organizer and developer of the symposium "Experiments and Modeling of Failure of Modern Materials" in honor of Prof. Sia Nemat-Nasser at the ASME AMD/ MD meeting in San Diego, June 26-30, 2001. A total of 50 papers were presented by some of the most eminent researchers in this field. The refereed papers were published in a special volume of Mechanics of Materials (an International Journal).
- Session developer and chair "Dynamic Behavior of Materials" 32nd Annual Technical Meeting of the Society of Engineering Science, New Orleans, LA, Oct 29 -Nov. 1, 1995.
- Session developer and chair for 2 sessions on "Mechanics Issues in Machining" at the joint ASME/ASCE/SES meeting McNU'97 at the North Western University in June 1997.
- Session developer and chair "Non-traditional Materials" at the joint ASME- AMD/MD meeting at VPI&SU in June26-30, 1999.
- Session developer "Behavior of Novel Materials" ICCES-05, Chennai India, Dec 1-6, 2005.
- Session developer and Chair "Dynamic response of biomaterials and heterogeneous materials", ASME-IMECE2009, Nov 13-19, Lake Buena Vista, Orlando, FL

Consultant

- Apple Inc, Cupertino, CA
- REL Machine, Calumet, MI

Reviewer

- DOE-NEUP preproposal review (2 in Nov 2019 and 1 in Mar 2019)
- ARO-YIP proposal review (Feb 2019)
- DOE-NEUP preproposal review (1) and SBIR review (2) (Nov 2018)
- NSF Panel Review (MoMS April 2018)
- DOE-NEUP Proposal review (Mar 2018)
- NSF Panel Review (MRSEC 2016 and CMMI-2016)
- ARO Proposal Review (July 2017; Jan and Dec 2016, March 2015, October 2012, Sept 2010, Feb 2009, June 2007, Apr 2005,May 2002); University of Cyprus (2009); King Abdulla Institute of Science and Technology (2011-13)
- Reviewer for SBIR/STTR proposals on Nuclear Technologies for DOE office of Science and Technology (Oct 2015, Nov 2013 and March 2013)
- Panel Reviewer for Natural Sciences and Engineering Research Council of Canada, Dec 3-5, 2012, Waterloo, Canada
- NSF, SBIR Panel on Advanced Engineering Materials, Aug 28, 2007
- Reviewer for US Civilian Research and Development Foundation (CRDF), 2006
- Reviewer for American Institute of Biological Sciences (Apr 2004)
- Reviewer for AFOSR (July 2004)
- Mail in Reviewer, NSF (Dec 2002)
- NSF SBIR Phase II, Proposal Review Panel (Oct 11, 2001)
- NSF SBIR Phase I, Proposal Review Panel (Aug 21-22, 2001) on 'Ceramics and Composites and Polymers Research'
- NSF review panel member, Mechanics of Materials, June 17, 2000
- NSF SBIR Proposal Review Panel (Sept 13, 1999) on 'Nanocrystalline Ceramics'
- NASA: Research Proposal Review Panel (June14-16, 1999) on 'Microgravity and Flight Experiments in Materials Science'
- NSF Panel Review (Oct 1997) on 'Nanocrystalline Ceramics'
- NSF proposal review 1998.
- Army Research Office (Proposal review 1996)
- Scientific Reports (Nature); Neuroimage; J. Mech. Phys. Solids; Int. J. Solids and Structures; J. Mater. Sci. Eng.; Mech. Mater.; ASME J. Eng. Industry; J. Am. Ceram. Soc.; J. Eur Ceram Soc.; Ceramics International, Composites B., Wear; Comp. Eng.; Metall. Trans.; Exp. Mech.; Comp Sci. and Tech.; Int. J. Frac.; ASM Metals; Int. J. Impact Eng.; Aluminum Trans., Acta Materialia; Scripta Materialia; J. Mech. Beh. Biomedical Mater; App. Phy. Let.; AIP- Rev. Sci. Instruments; Int. J. Fatigue, J. Nuclear Mater., J. Micromechanics and microengineering; Soft Matter; Eng. Frac. Mech;

Professional Courses Presented

- Two-day technical course on "Dynamic Response of Ceramics and Transparent Materials" developed exclusively for Ceramic Designers, Manufacturers and Material Scientists
  - Hopkins Extreme Materials Institute, Johns Hopkins University, Baltimore MD, March 07-08, 2017 and June 26-27, 2014
  - American Ceramic Society, Pittsburgh, PA, Oct 29-20, 2009
  - Creative Composites, Crystal River, MI, Apr 26,27, 2011
- Two-day technical courses on "High Strain Rate Response of Materials and its Relevance to Material Behavior During Crash" at Vandalia (1998-99), OH, Milford, MI and Toluca, Mexico (1997-98).

Service at University of Florida

- Member- University Academic Personnel Board (Representative of the College of Engineering on the advisory board to the President on the overall T&P process, 2015-16)
- Member – COE MAIC-PAIC Committee (2018- current)
- Member- COE Safety Committee - Representative from MAE department (2016-current)
- Member- Faculty Search Committee, Materials Science and Engineering (2015-2016).
- Chair- Faculty Search Committee, Mechanical and Aerospace Engineering (2013-2015)
- Member –Tenure and Promotion Committee, MAE Department (Spring 2013-current)
- Member - Development and External Affairs Committee (2014-Current)
- Member - College of Engineering (COE) Promotion and Tenure Committee (2009- 2012)
- Member - COE Faculty Council (2009- 2012)
- Member - University Senate (2009- 2012)
- MAE Graduation Admission Committee (2007-2009)
- MAE Development Committee (2007-2009)
- MAE Strategic Planning Committee (2007-2009)
- MAE Tenure and Promotion Committee (2016-Current)
- MAIC-PAIC committee, College of Engineering (Spring 2019-current)

Workshops/Lectures at UF

1. "Strategies for Getting Funding from DOD" Organized by College of Engineering, one of the five speakers (Apr 2014)
2. "Publishing in Graduate School" a workshop held by the University for Graduate Students- One of the two podium speakers (2013)

Undergraduate Student Awards and Achievements (supervised by me)

1. *Ms. Kimia Ghaffari, (2019-2020)*
    a. DOE-NEUP Integrated University Program (IUP)- Receive a $7,500 scholarship for the 2019-2020 academic year
    b. Presented her research at two international conferences:
        i. Society for Experimental Mechanics Annual Conference and Exposition, Reno, NV, June 2-7, 2019
        ii. Armor Ceramics - Challenges and New Developments; Session title: Quasi-Static and Dynamic Behavior IV, January 28, 2020; 44th International Conference and Exposition on Advanced Ceramics and Composites conference (ICACC 2020), Daytona Beach, FL,January 26-31, 2020,
2. *Mr. Mathew DeVries*
    a. *2nd Place* at the Young Stress Analyst competition conducted in conjunction with the10th International Conference on Experimental Mechanics by the British Society for Strain Measurement (BSSM) at Edinburgh, Scotland, Sept 1-4, 2015. He reecievd free boarding and registration by BSSM and travel cost was paid by the UF.
    b. *'Best Undergraduate Research Paper'* at the Annual MAE Awards and Honors Reception (Apr 2014)

Graduate Student Awards and Achievements

1. *Mr. Kshitiz Upadhyay* (2017-2020)
    - "Best Theoretical Approach" award in the 2019 National Science Foundation (NSF) Student Research Poster Competition at Salt Lake City, UT. This competition was held at the American Society of Mechanical Engineers (ASME) International Mechanical

Engineering Congress & Exposition (IMECE), and featured 188 participants presenting their NSF-funded research
- NSF travel grant to attend ASME-IMECE conference in Salt Lake City, Utah (Nov 8-14, 2019).
- First place in the 2019 Michael Sutton International Student Paper Competition at Society for Experimental Mechanics Annual Conference and Exposition at Reno, NV, June 2-7, 2019
- Outstanding International Student Award (2018-19)

2. Mr. Cody Kunka (2014-18):
   - *'NSF-Graduate Research and Engineering Fellowship' (2015-18). He was also selected to receive DOD-SMART and DOD-NDSEG Fellowships, but decided to accept NSF-GERP*
   - '2nd place *International Student Presentation Competition'* at the 2014 Annual SEM conference and Exposition, June 4-7, 2014, Greenville, SC
   - *'Attributes of a Gator Engineer- Integrity',* University of Florida (April 2015)
   - *'Best Undergraduate Research Paper'* at the Annual MAE Awards and Honors Reception (Apr 2014)
   - *'Graduate Student Research Award'* at the Annual MAE Awards and Honors Reception (Apr 2017)
3. Mr. Mathew DeVries (2015-2019)
   - *NSF-Graduate Research and Engineering Fellowship' (2015-18). He was also selected to receive DOD-NDSEG Fellowships, but decided to accept NSF-GERP*
   - *2nd Place* at the Young Stress Analyst competition conducted in conjunction with the10th International Conference on Experimental Mechanics by the British Society for Strain Measurement (BSSM) at Edinburgh, Scotland, Sept 1-4, 2015. He reecievd free boarding and registration by BSSM and travel cost was paid by the UF.
   - *'Best Undergraduate Research Paper'* at the Annual MAE Awards and Honors Reception (Apr 2014)
4. *Mr. Rafael Riera* (Joining in Summer 2018)
   - *Bridge to Doctorate: 2 year fully funded NSF Fellowship*
5. Ms. Alison Trachet (2014-2017)
   - *'2015-16 Fulbright U.S. Student Award to Austria' (Mar 2015)*
6. *'Innovations in Fuel Cycle Research' Award'* D. Permar, A Cartas, S. Yeo, L. Ge, J. Tulenko, R. Baney, G. Subhash, "FRAPCON 3.4 to determine enhanced performance of UO2 composite fuel fabricated by spark plasma sintering" *American Nuclear Society 2013 Student Conference – Massachusetts Institute of Technology* Boston, Massachusetts, USA, April 4-6, 2013, on CD-ROM, American Nuclear Society, LaGrange Park, IL (2013)
7. Mr. Phillip Jannotti(2011-2015)
   - '*Attributes of a Gator Engineer-Integrity'* award (Apr, 2013).
   - '*DOD National Defense Science and Engineering Graduate (NDSEG) Fellowship* (2012).
   - *3rd place - Student Paper Competition* at the Society of Experimental Mechanics, Lambard, IL (June 2013)
8. Mr. Gregory Parsard (2012-2017)
   - *2nd place - Student Paper Competition* at the Society of Experimental Mechanics, Lambard, IL (June 2013)
   - *NSF-Graduate Research and Engineering Fellowship'* (2011-14).
9. Mr. Dipankar Ghosh (2006-2010)
   - '*Outstanding International Student Award*', University of Florida (2009)
   - Featured along with five other graduate students from UF in the Fall 2009 issue of '*The Florida Engineer*', and
   - '*Best Ph.D. Dissertation Award*' by the Mechanical and Aerospace Engineering Department (2010)

10. Mr. Brian Koeppel (1994-97): His research on "A Novel Technique to Measure the Dynamic Indentation Hardness of Materials," was awarded **First Place** in student paper competitions at
    - the *Joint ASME/ASCE/SES* meeting at Northwestern University (McNU 97), June 29- July2, 1997
    - the *Society of Experimental Mechanics Student Paper Competition* held at the VIII International Congress on Experimental Mechanics, Nashville, TN, May 1996.
    - Articles on this research also appeared in 'Technotrends'
11. Articles have appeared in ***USA TODAY*** *Special Newsletter Edition* "The World of Science" June 1996/Vol.124/No.2613, pp. 7 and **Detroit News" (**a daily news paper) on 10/20/1997 and "Crain's Detroit Business- Research in Michigan" (2004)

Graduate Student Advising

Ph.D. Completed (34): 23 at University of Florida and 11 at Michigan Tech

1. Brian J. Koeppel, (1997) "Dynamic Vickers Indentation Hardness of Materials" (Employed at Pacific Northwest National Laboratories, Richfield Washington)
2. Josh Loukus, (Dec 2000) "Investigation of Material Removal Mechanisms During Single- Grit Scratching on Brittle Materials" (Visiting Assistant Professor at Michigan Tech, Part owner: REL Machine, Calumet MI)
3. Wei Zhang, (Aug 2001) "Finite element Analysis of Induced damage due to indentation and scratching on brittle materials" (Employed by ABAQUS)
4. Hong Wang, (Aug 2001) "Mechanics of material removal during the formation of single-grit rotating scratch with a conical tool" (Oak Ridge National Laboratories)
5. Chengyi Huang, (May 2003) "Wavelength Composition of Aggregate Texture using Data Dependent Systems Approach" (Faculty at Wuhan Textile University- Currently Vice President in School of Mechanical Engineering)
6. Qunli Liu, (June 2004) "Behavior of Polymeric Structural Foams" (Post-Doctoral Research Fellow, University of Austin, TX)
7. Mehdi Imaninejad, (Aug. 2004) "Experimental and Numerical investigation of hydroforming" (Manager, Intel Corporation, Phenix, AZ)
8. Adam E,. Loukus, (Dec 2004) "Evaluation of Material Properties and Optimization of Process Parameters During Hydroforming of Aluminum Extrusions" (Enterprenuer/part owner, REL Inc, Calumet, MI)
9. Hao Li, (Jan 2006) "Mechanical Behavior of Bulk Metallic Glasses and Their Composites"
10. Hongwen Zhang, (Dec 2006), "Shear Band Evolution in Bulk Metallic Glasses" (Indium Corporation of America, Utica, NY)
11. Yao Shanqi, (March 2007) "Nanoindentation Response of Diatom Frustules" (Caterpillar Inc., USA)
12. Dipankar Ghosh, (Oct 2009), "Deformation Mechanisms in Advanced Structural Ceramics due to Indentation and Scratch Processes" (Assistant Professor at Old Dominion University)
13. Jiwoon Kwon (June 2010), "Rheological behavior of Gelatin under High Shear Rates" (LS Cables Inc, Anyang, Korea)
14. Edward Haney (June 2011), "Deformation Mechanisms in High Performance Transparent Ceramics Due to Indentation and Impact Events" (Trijicon Inc., Wixom, MI)
15. Michael Klecka (June 2011), "Microstructure-Property Relationships and Constitutive Response of Plastically Graded Materials" (United Technology Research Center (UTRC), Stanford CT)
16. Tim Walters (June 2011; Co-Advisor: Bhavani Sankar) "Characterization of Delamination in 3D Woven Composites Under Static and Dynamic Loading"(Army Research Laboratories, Aberdeen Proving Grounds, MD)
17. Min Cheol Song (July 12, 2012; Co-Advisor: Bhavani Sankar) "Effect of Translaminar Reinforcements and Hybridization on Damage Resistance and Tolerance of Composite Laminates" (Employed in Korea)
18. Bryan D. Allison (Sept 2013: Co-Advisor: Arakere Nagaraj) "Evolution of Mechanical Properties of M50 Bearing Steel Due to Rolling Contact Fatigue" (SKF Aerospace NA, Jamestown, PA)

19. Lihao Ge (March 17, 2014), "Processing of Uranium Dioxide Nuclear Fuel Pellets using Spark Plasma Sintering"
20. Anup Pandkar (June 2014) "Modeling of the influence of Microstructure on Rolling Contact Fatigue of Bearing Steels" (Co-Advising with Prof. Arakere) (Siemens Corporation, Orlando, FL)
21. Yu Hong (July 2014) "Cavitation Induced Damage in Brain Tissue and Surrogates" (Co-Advising with Prof. Malisa Sarntinoranant).
22. Shafiq Muhamed (October 2014) "Influence of Confinement on the Deformation Behavior of Zirconium Diboride-Silicon Carbide" (Nexteer Automotive, Saginaw, MI)
23. Abir Bhattacharyya (November 2014) "Evolution of Cyclic Plasticity during Rolling Contact Fatigue of a Case-hardened Bearing Steel´(Assistant Professor, Indian Instituite of Technology, Jodhpur, India; Co-Advisor: Prof. Arakere Nagaraj, November 2014)
24. Phillip Jannotti (March 2015), "Impact Response of Strengthened Glass with Ultrahigh Residual Compressive Stresses" (Army Research Laboratories, Aberdeen Proving Grounds, Aberdeen, MD)
25. John Pittari (March 2015), "Rate Dependent Mechanical Respose of Ultra-High strength Advanced Structural Ceramics" " (Army Research Laboratories, Aberdeen Proving Grounds, Aberdeen, MD)
26. Canchi Saranya (May 2015) "Examining the Mechanisms of Primary Blast-Wave-Induced Injury Using *EX VIVO* Brain Tissue Slices" (Post-doc at University of California San Diego; Co-Advised with Prof. Malisa Sarntinoranant).
27. Zhichao Chen (Oct 2015) "Densification Evolution and Property Evaluation of UO2-Based Composites Fabricated by Spark Plasma Sintering" (Returned to China and is working in automotive industry)
28. Allison Trachet (Oct 2016) "Static and Dynamic Response of Reaction Bonded Silicon Carbide Composites and its Constituents" (Post-Doc at Hongkong University, Hongkong, China)
29. Gregory Parsard (Nov 2016) "Spatial Distribution of Amorphization Intensity in Boron Carbide During Rate-Dependent Indentation and Impact Processes" (Lockheed-Marten Company, Orlando, FL).
30. Nikhil Londhe (May 2017) "Rolling Contact Fatigue Life Investigation of Through- and Case-Hardened Bearing Steels using Experimental Testing and Finite Element Modeling," (Co-advised with Prof. Nagaraj Arakere), The Timken Company, North Canton, OH.
31. Nili Bijan (June 2018), "Multi-Physics Simulation of Spark Plasma Sintering for Fabrication of Commercial Nuclear Fuel Pellets", (Intel Corporation, Tucson, AZ).
32. Cody Kunka (08/20/2018) "Quantum and Experimental Mechanics of Icosahedral Ceramics" (Sandia National Laboratories, Albuquerque, NM)
33. Salil Bavdekar (02/21/2019) "A unified analytical model for the dynamic response of structural ceramics to impact and penetration" (Post-doc at UF)
34. Mathew DeVries (05/14/2019) "Amorphization of Boron Carbide: Influence of Gran Size, Secndary Phases and High Pressure" (Corvid Inc., South Carolina)

Currently Enrolled PhD students

1. Kshitiz Upadhyay (Scheduled to defend on March 26, 2020)
2. Amith Adoor Cheenady (Started in Spring 2018)
3. Rafael Riera (Started in June 2018)
4. James Nance (Started in Aug 2018- MSE Department)
5. Thandaga Nagaraju Hemanth (Co-Advising with Prof. Bhavani Sankar, Started in Aug 2018)
6. Hui Zhou (Started in Fall 2018; Co-Advising with Prof. Chelsey Simmons)

Post Doctoral and Research Fellows

1. Salil Bavdekar (Sept 16, 2019 – Current)
2. Amnaya Awasthi (Nov 2014-Dec2018; Currently at Nanofactory CBN, 'CBN Secure Technologies')

3. Abir Bhattacahryya (Mar 2018-Sept 2018; Assistant Professor , IIT Bhuvaneshwar, India)
4. Ricardo P. Weber, CNPQ Scholarship for Research, Brazil (Aug 2014-Jan 2016)
5. S. Sathya Narayan, Raman Research Fellowship, CSIR, India (Jan 2014-April 2014)
6. Sunghwan Yeo (Sept 2013- Dec 2013)
7. Eddie McKinna (Sept-Nov 2011, Intel Corp)
8. Mike Klecka (Oct 2011-March 2012, Pratt & Whitney)
9. Qunli Liu, Henry Jackson Fellow (Feb 2009- Feb 2011)
10. Dipankar Ghosh (Jan 2010- Dec 2010, Assistant Professor, Old Dominion University)
11. M. Prabhakar Rao (May 2008-June 2010, Co-Advisor: Bhavani Sankar)
12. Xiaoning Jing (2003-2004)
13. Chengyi Huang (1997-1999)

PhD Thesis Committee Member at UF

1. Michael Kesler (Prof. Ibrahimi, MSE, Nov 2011)
2. Sonalika Goyel (Prof. Ibrahimi, MSE, Apr 2011)
3. Andrew Wasson (Prof. Gerhard Fuchs, MSE, 2010)
4. Mulugeta A. Haile (Prof Peter Ifju, MAE, Feb 2010)
5. Branch Nathan (Prof. N. Arakere, MAE, June 2010)
6. Shawn English (Prof. N. Arakere, MAE, June 2011)
7. Andrew Cartas (Prof. James Tulenko, Nuclear Sciences Eng. 2011- 2014)
8. Justin Daniel McIntire (Prof. Peter Ifju, MAE Department, 27 Oct 2011)
9. Reebie Simmis (Prof. Rey Roque , Civil Eng. Dept, 2011-2013)
10. Lo, Wei-Yang (Prof. Yong Yang, MSE 2012-2014)
11. Yeo Sunghwan (Prof. Ronald Baney, MSE 2010-2013)
12. David Lavenhagen (Prof. Ted Krauthammer, CIPPS, 2011-2014)
13. Matthew Karnick (Prof. G. Fuchs, MSE, 2013-2016)
14. Choel Jong Kim (Prof. Rajiv Singh, MSE Dept, 2013-2016)
15. Brendan Patterson (Prof. Henry Sodano, MAE, 2013-2016)
16. David Mills (Prof. Mark Sheplak, MAE, 2011-2014)
17. Michael Stone (Prof. Ted Krauthhammer, CEE, 2014-2017)
18. Ke Luo (Prof. Douglas Spearot, MAE 2017-2020)
19. Jhonathan Rosales (Prof. James Tulenko, MSE, 2016-2018)
20. Samantha W. Coberly (Prof. John Krigbaum, Department of Anthropology, 2018-2021)
21. Brandon Witbeck (Prof. Simon Philpot, MSE Department 2018-2021)
22. Yixi Shen (Prof. Douglas Spearot, MAE 2018-2021)
23. Lee, Kangjae (Prof. Jonathan Scheffe, MAE 2017-2020)

PhD Thesis Evaluation Member for International Institutions

1. Mr. K. Eswara Prasad (Advisor: Prof. Ramamurty) Indian Institute of Science, Bangalore, India, (2011)
2. Mr. Arjun Day (Advisors: Prof. Anoop Kumar Mukhopadhyay and Nil Ratan Bandyopadhyay, Bengal Engineering and Science University, Shibpur, Howrah, India, 2011)
3. Mr. K. Giridhar, Indian Institute of Technology, Chennai (2013)
4. Mr. Vivek Ramakrishna, "Single Image based isochromatic evaluation in digital photoelasticity and its applications", Indian Institute of Technology, Chennai (Advisor: Prof. K. Ramesh, Dec 2016)
5. Mr. H. Ravi Sankar, (Advisor, Prof. P. Venkitanarayanan) "Effect of perforations on the progressive collapse of cylindrical shells under axial impact" (Feb 2018), Indian Institute of Technology, Kanpur, India

M.S. (15) Completed

1. Stephen M. Beesley, M.S. (1996) "Investigation of Flexural Strength and Compressive Fatigue Behavior of Hot-Pressed Aluminum Nitride Ceramics" (Employed by FORD Motor Co.)
2. Satish Venugopalan, M.S. (1998) " Characterization of MTU-JS1 Alumina under Multi-axial Confinement" (Employed by GE)
3. Stacy Blystone, M.S. (1998) "Consolidation of W-Hf-Ti Powders" (Employment: Honeywell Inc.)
4. Richard J. Anton, M.S. (1998) "Investigation of Materials Removal mechanisms During Static and Dynamic Vickers Indentation of Brittle Materials" (FORD Motor Co.)
5. Phil Lukens, M.S., (Aug 2000) "Investigation of Tensile Properties of Chemical Vapor Deposited Rhenium" (FORD Motor Co., Detroit))
6. Sivanathan Prasoody, M.S., (Aug 2000) "Investigation of the Influence of Process Parameters During Hydroforming of Aluminum Extrusions" (employed by Norsk-Hydro at Holland, MI)
7. Chin Fei Lee, M.S. (Dec 2001), "Assessment of induced damage during single-scratch and multi-scratch experiments in structural ceramics" (Returned to Malaysia)
8. Glenn Pietla, M.S., (May 2002), "Characterization of the Dynamic Tensile Properties of a Glass Fiber reinforced thermoplastic at high strain rates" (Co: advisors: John Ligon and I.Miskioglu)
9. Brandon Ollanketo, M.S. (May 2002), "Characterization of the Dynamic Tensile Properties of a Glass Fiber reinforced thermoplastic at high strain rates and two temperatures" (Co-advising with J. Ligon, I. Miskioglu)
10. Raka Bandyo, M.S., (April 2004), "Investigation into Scratch Susceptibility of Structural Ceramics" (Working for a company in Madison, WI)
11. Melissa A. Marszalek," M.S. (Feb 2006) Scratch Resistance of Machined Structural Ceramics" (Boeing, Seattle)
12. Sukumar Chella, M.S., (Jan 2007) "Fatigue Testing of Hydroformed Extruded Al6063 Tubes"
13. Mark Klein, M.S. (Apr, 2007) "Transverse tensile property determination of hydroformed and unhydroformed aluminumn tubes"
14. Mike Klecka, M.S., (Apr, 2007), "Grain Size Dependence of Scratch induced Deformation in Alumina Ceramics"
15. Myong Hwa Lee, (Dec 2011; Co-advised with Prof. Nagaraj Arakere), "Work Hardening Response of Case Hardened M50NIL Steel Induced by Rolling Contact Fatigue" (Returned to S. Korea)

Undergraduate Advisees at UF (Since 2007)

1. Daniel McIntyre (Fall 2008-June 2009), MSE
2. Maciak Justin (Fall 2009 Spring and Fall 2010), MAE
3. Bellman Matthew (Fall 2009), MAE
4. Phillipe Jannoti (Fall 2009, Sp2010, Summer 2010, Became a PhD student Fall 2010)
5. John M. Culver (Summer 2009)
6. John Pittari (Spring 2010 - Current), MAE
7. Gregory Parsard (Spring, Summer and Fall 2010), MAE
8. Justin Blaber, University Scholar (Spring 2010 - Current), MAE
9. Patrick Frenzer (Summer 2010), MSE
10. Erik Hofstetter, University Scholar (Summer and Fall 2010), MSE
11. Clayton Cozzan (Spring and Summer 2011), MSE
12. Amy Pittman (Spring 2011, Fall 2011, Spring 2012), MAE
13. Samuel Scudder (Spring 2011), MAE
14. Casey McKibben (Spring 2012), MAE
15. Cody Kunka (Fall, Spring 2013-Spring 2014); UF-UG Scholar
16. Lauren Krueger (Spring 2014)
17. Matthew DeVries (Fall 2013-Spring 2015)
18. Vladimir Horwitz (Summer 2014 – Spring 2015)
19. Amanda Wei (Summer and Fall 2015)
20. Salinas Santiago (Summmer and Fall 2015)

21. Kyle Kelley (NSE and MSE, Summer 2015)
22. Jonathan Rosales (NSE and MSE, Summer 2015)
23. Patrick Moo (NSE and MSE, Summer 2015)
24. Darren Skitt (NSE and MSE, Summer 2015)
25. Jessica Haider (ECE, Spring-Fall 2015)
26. Serge Rogachev (Spring and Summer 2015)
27. Susan Stanfill (MSE, Fall 2015, Fall 2016, Spring 2017)
28. Pedro Cruz (MAE, Fall 2015,Spring and Fall 2016)
29. Mathew Banks (Summer & Fall 2016)
30. Douglas Steinbach (Fall 2016, Spring 2017, Fall 2017)
31. Molly Coovert (Fall 2016, Spring 2017)
32. Kimia Ghaffari (Spring 2018-current)
33. Arroyo-Green Miguel (Sprimg 2019-Current)

University Minority Mentor Program Advisor:

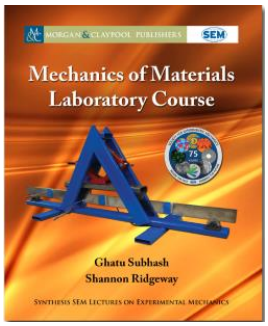
1. Chatoyer Haynes (2011-12)
2. Goudy Brandon (2012-13)

Publications

Guest Editor

1. Special Issue on "Experimental and Computational Studies on Deformation, Damage and Failure of Materials" for Prof. Ravichandran (CalTech) 60th Anniversary, Editors: Ghatu Subhash, Christian Franck, and Samantha Daly (June 2019)
2. Special Issue on "Transparent Armor Materials" *Experimental Mechanics,* Vol. 53[1] (January 2013), Guest Editor: Ghatu Subhash
3. "Deformation, Fracture and Failure of Advanced Materials" special issue of *Mechanics of Materials* on Sia Nemat-Nasser's (UC San Diego) 65th Anniversary, Editors: H. Espinosa and G. Subhash, Vol 35[3-6] (2003)

Books



1. *"Mechanics of Materials Laboratory Course"* Ghatu Subhash and Shannon Ridgeway, Morgan & Claypool Publishers, 226 pages, May 2018; Paperback ISBN: 9781681733333; eBook ISBN: 9781681733340; Hardcover ISBN: 9781681733357.
2. Ghatu Subhash, Amnaya Awasthi, Dipankar Ghosh "Dynamic Behavior of Structural Ceramics and Transparent Materials" (Expected completion in Summer 2020; Contract signed with Wiley Publishers)

Book Chapters/Articles

1. S. Bavdekar and G. Subhash, "Failure mechanisms of brittle materials under quasi-static and dynamic loads: Overview" Handbook of Damage Mechanics: Nano to Macro Scale for Materials and Structures, edited by George Z. Voyiadjis (in press, Mar 2020), Springer
2. D. Ghosh and G. Subhash, "Recent Progress in Zr(Hf)B_2 based Ultra-high Temperature Ceramics" Handbook of Advanced Ceramics, Chapter 3.3, Elsevier Inc., 2nd edition 267-299 (2013)
3. P. Jannotti and G. Subhash, "Damage Mechanisms of Chemically Strengthened Glass Bars Due to High-Velocity Ball Impact," The Society of Experimental Mechanics, Chapter 24, (2014) (in press)
4. D. Ghosh[+] and G. Subhash, "Scratch Studies in Boron-Rich Lightweight and Ultrahigh Temperature Ceramics", in Boron-Rich Solids: Sensors, Ultrahigh Temperature Ceramics, Armor, Eds: N. Orlovskaya and M. Lugovy, Springer, NATO Science for Peace and Security Series-B: Physics and Biophysics Pages 83-94 (2011).
5. E. D. Reedy, Jr., M. P. de Boer, A. D. Corwin, M. J. Starr, F. Bitsie, H. Sumali, J. M. Redmond, R.

E. Jones, B. R. Antoun, G. Subhash, R. W. Carpick, E. E. Flater, M. D. Street, W. R. Ashurst, "High Fidelity Frictional Models for MEMS" SANDIA REPORT SAND2004-4791, Sandia National Laboratories, Albuquerque, New Mexico 87185 and Livermore, California 94550

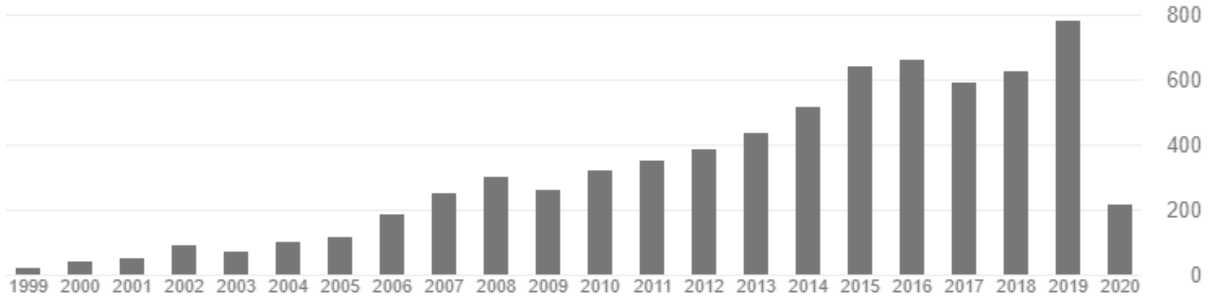
6. G. Subhash, "Dynamic Indentation Testing" ASM Handbook, Mechanical Testing and Evaluation, Volume 8, ASM International, 519-529 (2000)
7. G. Subhash and G. Ravichandran, "Split Hopkinson Pressure Bar Testing of Ceramics," ASM Handbook, Mechanical Testing and Evaluation, Volume 8, ASM International, 497- 504 (2000).

Patents and Invention Disclosures

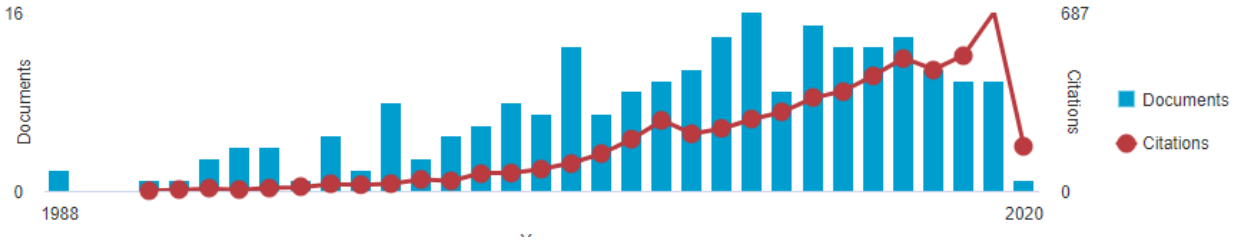
1. G. Subhash and G. Dantes, "Liquid Prophylactic Ankle Brace", Serial No. PCT/US2017/058280; US-2020-0054492-A1 (02/20/2020); Application no. 16/345925
2. G. Subhash, S.A. Svoronos, A.P. Simon, C.T. Ho, Y.K. Wiggemans, A.M. Axelrod, M.E. Warkander, M.D. Maxey, A.D. Jess, "Method and Apparatus for Testing Testing Quality of seal and Package Integrity", U.S. Patent Application Docket No. UF.1084CXC1, Serial No. 14/650,010; Amendment submitted on June 14, 2017.
3. Ghatu Subhash and Richard Blair, "Synthesis and Processing of Ultra High Hardness Boron Carbide", US. Patent No. 9604885 B2. Issue date: 03/28/2017
4. Ghatu Subhash and Bruce Welt, "Method and Apparatus for Quality of Seal and Package Integrity Testing" International Patent No. US 9,518,891 B2, Issue date: 12/13/2016.
5. G. Subhash, A. Chandra and B.J. Koeppel, "Apparatus and Method for Determining the Dynamic Indentation Hardness of Materials," US Patent # 6343502 (2/5/02) and Canadian Patent # 2207354, 09/28/2004.
6. G. Subhash, "Quality of Seal and Package Integrity Testing", Serial No. 61/773,754, U.S. Provisional Patent Application filed December 5, 2012 (Docket No. UF.1084P).
7. K. Peters and G. Subhash, "Impact Absorption and Imparted Energy Dissipation Cushions", ID UF#-14291, submitted on 06/18/2012, US Provisional Patent filed in Dec 2012.
8. G. Subhash and K. Peters, "Linear and Rotational Impact Absorbing System using Newtonian and Non-Newtonian Fluids for Prevention of Concussion and Impact-Induced Injuries", ID UF#-14455.
9. R. Baney, J. Tulenko and G. Subhash, "Sintering of High Density and High Thermal Conductivity UO2+SiC Composites using SPS", ID UF#14244, Submitted 05/16/2012, provisional patent filed in 2012.
10. G. Subhash, J. Tulenko and R. Baney, "Rapid Consolidation of UO2 Powder Using Spark Plasma Sintering", ID #14243, Submitted 05/16/2012.
11. J. Tulenko, R. Baney, and G. Subhash, "Urania Based Nuclear Fuel Containing Diamond Particles with Greatly Enhanced Thermal Conductivity", ID #14238, submitted on 05/10/2012.
12. G. Subhash, R.H. Baney, J.S. Tulenko, E. McKenna, L. Ge and S. Yeo, "High Density UO_2 and High Thermal Conductivity UO_2 Composites by Spark Plasma Sintering", US patent filed (Aug 2012).

Citations

- **Google Scholar = 7180 (03/06/2020)** **h-index = 46** **i10 index = 143**



- **Scopus = 5741 (03/06/2020)** **h-index = 40**



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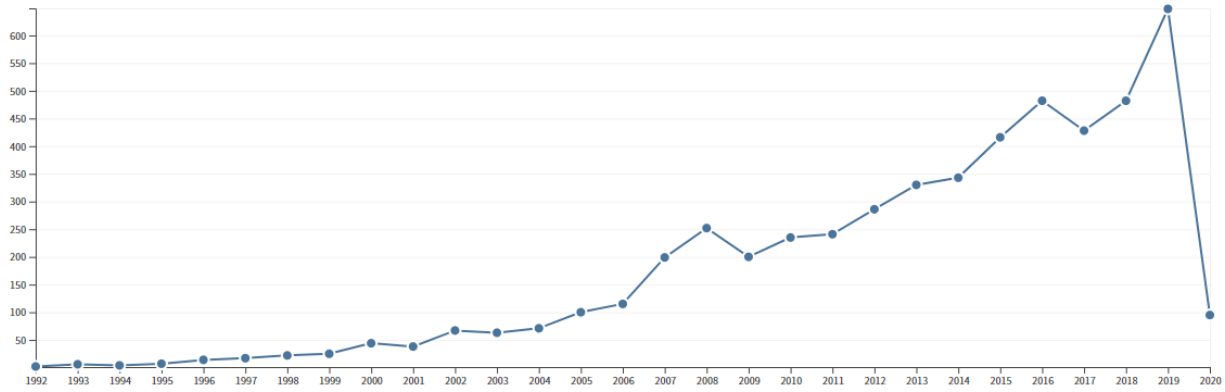
ISI Web of Science =5232 (03/06/2020) **h-index = 39**



Peer-Reviewed Journal Articles (195 in print/press/accepted + 2 submitted)
[+]Student, *Corresponding Author, [P]Post-doc

2020 (4)

1. A. Awasthi[P] and G. Subhash*, "Deformation behavior and amorphization in icosahedral boron-rich ceramics" *Progress in Materials Science* (in press, Mar 01, 2020) → 5-Year Impact Factor: 33
2. K. Upadhyay[+], G. Subhash* and D. Spearot, "Visco-hyperelastic constitutive modelling of strain rate sensitive soft materials", *Journal of the Mechanics and Physics of Solids* 135(2020)103777; https://doi.org/10.1016/j.jmps.2019.103777
3. Luo, Ke[+]; Wangari, Charity; Subhash, Ghatu; Spearot, Douglas* "Effect of loop defects on the high strain rate behavior of PEGDA hydrogels: A molecular dynamics study" The *Journal of Physical Chemistry B, (in press, Feb 2020- selected for cover page);* https://doi.org/10.1021/acs.jpcb.9b11378
4. Matthew DeVries[+], Amnaya Awasthi[P] and Ghatu Subhash*, "Shocked ceramics melt: An atomistic analysis of thermodynamic behavior of boron carbide" *Physial Review B* (3rd review in progress, recommended for publication after revisions, March 2020)

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5. K. Upadhyay[+], G. Subhash* and D. Spearot, "Thermodynamics-based stability criteria for constitutive equations of isotropic hyperelastic solids" *Journal of the Mechanics and Physics of Solids* 124(2019)115-142; https://doi.org/10.1016/j.jmps.2018.09.038
6. Ke Luo, Kshitiz Upadhyay[+]; Ghatu Subhash; Douglas Spearot*, "Transient state rheological behavior of poly(ethylene glycol) diacrylate hydrogels at high shear strain rates" *Macromolecules 52 [15]* (2019) 5860-5871; https://doi.org/10.1021/acs.macromol.9b00820
7. A. Awasthi[P] and G. Subhash*, "High-pressure deformation and amorphization in boron carbide" *Journal of Applied Physics 125* (2019) 215901, DOI:10.1063/1.5091795
8. C. Kunka[+], S. Bavdekar[+], N. Rudawski, A. Fournier, G. Subhash*, "Oxidation of the Polycrystalline Copper-Graphene Nanocomposite" *Journal of Physics: Materials* 2(2019)025005 https://doi.org/10.1088/2515-7639/ab0aab
9. K. Luo[+], Y. Noah, G. Subhash and D. Spearot*, "Effect of Water Concentration on the Shock Response of Polyethylene Glycol Diacrylate (PEGDA) Hydrogels: A Molecular Dynamics Study" *Journal of the Mechanical Behavior of Biomedical Materials* 90 (2019) 30-39 https://doi.org/10.1016/j.jmbbm.2018.09.017
10. N. Bijan[+] and G. Subhash*, "Influence of Porosity and Pellet Dimensions on Temperature and Stress Inhomogeneities during Spark Plasma Sintering of Ceramic Fuel" *Ceramic International* (45[6] (*2019) 7376-7384;* 10.1016/j.ceramint.2019.01.022
11. N. Londhe[+], N. Arakere*, G. Subhash, "Strain-Life Approach for Rolling Contact Fatigue Life Prediction of Bearing Steels under Elastic-Plastic Loading", *Tribology International 133(*2019) 160-171; https://doi.org/10.1016/j.triboint.2018.12.034
12. M. DeVries[+] and G. Subhash*, "Influence of carbon nanotubes as secondary phase addition on the mechanical properties and amorphization of boron carbide" *Journal of the European Ceramic Society 39[6](2019)1974-1983* https://doi.org/10.1016/j.jeurceramsoc.2019.01.032
13. K. Upadhyay[+], A. Bhattacharyya, G. Subhash* and D. Spearot "Quasi-static and High Strain Rate Simple Shear Characterization of Soft Polymers", *Experimental Mechanics* 59(2019)733-747 https://doi.org/10.1007/s11340-019-00507-1
14. S. Bavdekar[+], G. Subhash*, and S. Satapathy "A Unified Model for Dwell and Penetration during Long Rod Impact on Thick Ceramic Targets" *International Journal of Impact Engineering* 131 (2019) 304-316; DOI: 10.1016/j.ijimpeng.2019.05.014

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15. C. Kunka[+], Q. An, N. Rudawski, G. Subhash*, J. Zheng, V. Halls, J. Singh, "Nanotwinning and Amorphization of Boron Suboxide" *Acta Materialia* 147 (2018) 195-202 https://doi.org/10.1016/j.actamat.2018.01.048

16. C. Kunka[+], X. Yang, Q.An, G. Subhash*, "Icosahedral Superstrength at the Nanoscale," *Physical Review Materials,* 2, 063606 (2018); https://doi.org/10.1103/PhysRevMaterials.2.063606
17. J. C. Kim, J. Kim, Y. Xin, J. Lee, Y-G. Kim, G. Subhash, R. Singh, A. Arjunan, and H. Lee*, "Micro-Architecture Embedding Ultra-Thin Interlayer to Bond Diamond and Silicon via Direct Fusion" *Applied Physics Letters,* 112, *(*2018) 211601-1 to 211601-4 https://doi.org/10.1063/1.5030580
18. G. Parsard[+], G. Subhash* and P. Jannotti[+], "Amorphization-Induced Volume Change and Residual Stresses in Boron Carbide" *Journal of the American Ceramic Society* 101 (2018) 2606-2615; DOI: 10.1111/jace.15417
19. S. Bavdekar[+] and G. Subhash*, "Comparison of Pressure-Sensitive Strength Models for Ceramics Under Ultrahigh Confinement", *International Journal of Impact Engineering* 118 (2018) 60-66 DOI: 10.1016/j.ijimpeng.2018.04.007
20. M. DeVries[+], G. Subhash*, A. McGhee, P. Ifju, Tyrone Jones, J. Zheng, V. Halls, "Quasi-static and Dynamic Response of 3D-printed Alumina" *Journal of European Ceramics Society* 38 (2018) 3305-3316 https://doi.org/10.1016/j.jeurceramsoc.2018.03.006
21. B. Nili[+], G. Subhash*, J. Tulenko "Coupled Electro-Thermo-Mechanical Simulation for Multiple Pellet Fabrication Using Spark Plasma Sintering" *Journal of Manufacturing Science and Engineering, 140* (2018) 051010-1 to 051010-12 DOI: 10.1115/1.4038295
22. ND Londhe[+], NK Arakere*, G Subhash, "Extended Hertz Theory of Contact Mechanics for Case-Hardened Steels With Implications for Bearing Fatigue Life" *Journal of Tribology* 140 (2018) 021401: pp 1-11
23. J-C Kim[+], J. Lee, J. Kim, R.K. Singh*, P. Jawali, G. Subhash, A.C. Arjunan, "Challenging Endeavor to Integrate Gallium and Carbon via Direct Bonding to Evolve GaN on Diamond Architecture" *Scripta Materialia* 142 (2018) 138-142; doi/10.1016/j.scriptamat.2017.08.041
24. J. Tatar*, N. Brenkus, G. Subhash, C. Taylor, H.R. Hamilton, "Characterization of Adhesive Interphase between Epoxy and Cement Paste via Raman Spectroscopy and Mercury Intrusion Porosimetry" *Cement and Concrete Composites* 88 (2018) 187-199 https://doi.org/10.1016/j.cemconcomp.2018.01.012

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25. P. Jannotti[+], G. Subhash*, J. Zheng, V. Halls "Measurement of Microscale Residual Stresses in Multi-Phase Ceramic Composites Using Raman Spectroscopy" *Acta Materialia* 129 (2017) 482-491; http://dx.doi.org/10.1016/j.actamat.2017.03.015
26. C. Kunka[+], A.P. Awasthi (PG), and G. Subhash*, "Evaluating Boron-Carbide Constituents with Simulated Raman Spectra" *Scripta Materialia* 138 (2017) 32-34 http://dx.doi.org/10.1016/j.scriptamat.2017.05.030
27. G. Parsard[+] and G. Subhash*, "Raman Spectroscopy Mapping of Amorphized Zones Beneath Static and Dynamic Vickers Indentations on Boron Carbide," *Journal of the European Ceramic Society* 37 (2017) 1945-1953; http://dx.doi.org/10.1016/j.jeurceramsoc.2016.12.045
28. S. Bavdekar[+], G. Parsard[+], G. Subhash*, and S. Satapathy "An Improved Dynamic Expanding Cavity Model for High-Pressure and High-Strain Rate Response of Ceramics" *International Journal of Solids and Structures* 125 (2017) 77-88 https://doi.org/10.1016/j.ijsolstr.2017.07.014
29. S. Narayanan and G. Subhash* "Wave Propagation in Ballistic Gelatine," *Journal of the Mechanical Behavior of Biomedical Materials 68 (*2017)32-41; http://dx.doi.org/10.1016/j.jmbbm.2017.01.030
30. S. Canchi[+], M. Sarntinoranont, Y. Hong[+], J.J.Flint, G. Subhash, M. A. King*, "Simulated Blast Overpressure Induces Specific Astrocyte Injury in an Ex-vivo Brain Slice Model" *PLOS ONE 12[4]: Pages: e0175396;* DOI: 10.1371/journal.pone.0175396
31. S. Canchi[+], K. Kelly, Y. Hong[+], M. A. King, G. Subhash, M. Sarntinoranont*, "Controlled single bubble cavitation collapse results in jet-induced injury in brain tissue," *Journal of the Mechanical Behavior of Biomedical Materials 74(2017) 261-273*

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32. A. Bhattacharyya[+], N. Londhe[+], N. Arakere*, G. Subhash,"A New Approach Towards Life Prediction of Case Hardened Bearing Steels Subjected to Rolling Contact Fatigue" *ASTM Materials Performance and Characterization* 6 (4), (2017) 1-22 doi:10.1520/MPC20160099.
33. T. Ironman[+,*], J.Tulenko, G. Subhash, "Exploration of Viability of Spark Plasma Sintering for Commercial Fabrication of Nuclear Fuel Pellets" Nuclear Technology 200 (2017) 144-158 DOI: https://doi.org/10.1080/00295450.2017.1360714

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34. G. Subhash*, A.P. Awasthi (PG), C. Kunka[+], P. Jannotti[+] and M. DeVries[+], "In Search of Amorphization-Resistant Boron Carbide" Editor Invited 'Viewpoint Article' in *Scripta Materialia* 123 (2016) 158-162; doi:10.1016/j.scriptamat.2016.06.012
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36. Z. Chen[+], G. Subhash* and J. Tulenko, "Raman Spectroscopic Investigation of Graphitization of Diamond during Spark Plasma Sintering of UO2-Diamond Composite Nuclear Fuel" *Journal of Nuclear Materials 475* (2016) 1-5; doi:10.1016/j.jnucmat.2016.03.015
37. M. Shafiq[+] and G. Subhash* "An Extended Mohr-Coulomb Model for Fracture Strength of Intact Brittle Materials under Ultrahigh Pressures", *Journal of the American Ceramic Soc*iety 99(2016) 627-630. DOI: 10.1111/jace.14026
38. A. Trachet[+] and G. Subhash* "Microscopic and Spectroscopic Investigation of Phase Evolution within Static and Dynamic Indentations in Single-Crystal Silicon", *Materials Science & Engineering A* (2016) 321-331. DOI: 10.1016/j.msea.2016.07.037
39. C. Kunka (G), A.P. Awasthi (PG), and G. Subhash*, "Boron-carbide polymorphs: nomenclature, equivalence and Raman spectra", *Scripta Materialia,* 122 (2016) 82-85 doi:10.1016/j.scriptamat.2016.05.010
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42. Y. Hong[+], M. Sarntinoranont, S. Canchi[+], M. A. King, G. Subhash*, "Localized Tissue Surrogate Deformation due to Controlled Single Bubble Cavitation" *Experimental Mechanics* 56[1](2016) 97-109. DOI: 10.1007/s11340-015-0024-2.

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68. B. J. Koeppel and G. Subhash, "Microstructural Dependence of Plastic Response in CVD and PM Rhenium" *Proceedings of The 32nd SES Annual Meeting,* New Orleans, LA, Oct 30-Nov 2, pp. 587-588, (1995).
69. B.J. Pletka, G. Subhash, D. Edelman and R.J. Dowding, "Processing-Structure Relationship in Open die Hot Forged W-Hf-Ti," *Proceedings of the Third International Conference on Tungsten and Refractory Metals,* edited by A. Bose and R.J. Dowding, Metal Powder Industries Federation, Princeton, NJ, pp. 201-208, (1995).
70. B. Koeppel and G. Subhash, "Plastic Response and Deformation Microstructures in Rhenium" Micromechanical Modeling and Damage Characterization of Advanced materials, ed: S.A. Meguid, ASME-AMD-Vol.199, pp. 93-100, ASME, New York, NY (1995)
71. G. Subhash, R.J. Dowding, D. Edelman and D. Kapoor, "High Strain Rate Behavior of W- Hf and W-HfC Composites," *Proceedings of the 2nd International Conference on Tungsten and Refractory Metals,* edited by A. Bose and R.J. Dowding, Metal Powder Industries Federation, Princeton, NJ, pp.213-218, (1994).
72. D. Edelman, B.J. Pletka, and G. Subhash, "Development of W-Hf-Ti Composites by Liquid Phase Sintering," *Proceedings of the 2nd International Conference on Tungsten and Refractory Metals,* edited by A. Bose and R.J. Dowding, Metal Powder Industries Federation, Princeton, NJ, pp.227-234, (1994).
73. G. Subhash, B.J. Pletka, and G. Ravichandran, "Constitutive Response and Characterization of

Deformation Modes in Hafnium," *Proceedings of the 2nd International Conference on Tungsten and Refractory Metals,* edited by A. Bose and R.J. Dowding, Metal Powder Industries Federation, Princeton, NJ, pp.597-604, (1994).

74. B. Koeppel and G. Subhash, "Constitutive Response and Characterization of Deformation Modes in Rhenium," *Proceedings of the 2nd International Conference on Tungsten and Refractory Metals,* edited by A. Bose and R.J. Dowding, Metal Powder Industries Federation, Princeton, NJ, pp.673-680, (1994).
75. G. Subhash and G. Ravichandran, "High Strain Rate Behavior and Localization in Hafnium," Experimental Techniques in the Dynamics of Deformable Solids, edited by K. T. Ramesh, AMD-Vol. 152, pp. 79-84, ASME, New York, NY (1993).
76. G. Subhash and G. Ravichandran, "High Strain Rate Behavior and Localization in Hafnium," *Proceedings of* 13th *Army Symposium on Solid Mechanics*, eds. S.C. Chou, F.D. Bartlett Jr., T.W. Wright and K. Iyer, pp. 621-631, (1993).
77. G. Subhash and S. Nemat-Nasser, "Microcrack Induced Damage in Zirconia Ceramics Under Uniaxial Compression: Experiments and Modeling," Advances in Local Fracture/ Damage Models for the Analysis of Engineering Problems, **AMD-Vol. 137**, *Proceedings of ASME Summer Mechanics and Materials Conference,* Tempe, Arizona, April 28-May 1, 1992, eds., J. H. Giovanola and A. J. Rosakis, 93-107 (1992).
78. M.M. Mehrabadi, S. Nemat-Nasser, H.M. Shodja and G. Subhash, "Some Basic Theoretical and Experimental Results on Micromechanics of Granular Flow," Micromechanics of Granular Materials, *Proceeding of the US/Japan Seminar on Micromechanics of Granular Materials*, Sendai-Zao, Japan, edited by M. Satake and J.T. Jenkins, 253-262, Oct 26-30, (1987).
79. G. Subhash, S. Rahamatulla and S.V. Rao, "Transient Thermal Behavior of Steam Chest During Turbine Startups," *Proceedings of Fifth International Conference,* Montreal, Canada, , June 29-July 3, 1987, Numerical Methods in Thermal Problems, eds., R. W. Lewis, K. Morgan and W. G. Habashi, Pineridge Press, Swansea, U.K., pp. 1868-1876 (1987).
80. G. L. Narasaiah, G. Subhash and N.V.L.S. Sarma, "A 3-D Mesh Generator for FEM Analysis of Complex Structures," *Proceeding of All India Seminar on Computers for 1990s for India*, Trichirapalli, India, D3.01-D3.14, Aug 22-23, (1986).

Other Articles

1. "The Mystery of Florida's Cannonball-Eating Spanish Fort: The secret is inside the walls themselves" by Lina Zeldovich, July 4, 2019; https://www.atlasobscura.com/articles/coquina-fort-in-florida?utm_medium=atlas-page&utm_source=facebook.com
2. "SDSC Supercomputer Simulations Aid in Solving Boron Carbide Mystery", Dec 17, 2019; https://ucsdnews.ucsd.edu/pressrelease/sdsc-supercomputer-simulations-aid-in-solving-boron-carbide-mystery
3. Xsede,org on (January 7, 2020) https://www.xsede.org/-/xsede-supercomputer-simulations-aid-in-solving-boron-carbide-mystery?redirect=https%3A%2F%2Fwww.xsede.org%2Fnews%2Fscience-stories%3Fp_p_id%3D101_INSTANCE_9JovW1UTN10Q%26p_p_lifecycle%3D0%26p_p_state%3Dnormal%26p_p_mode%3Dview%26p_p_col_id%3Dcolumn-2%26p_p_col_count%3D1
4. "Biographical Sketch" of Prof. Sia Nemat-Nasser, Mechanics of Materials 35 (2003) 185-186.

Keynote or Invited Presentations at Conferences

1. Invited (by Invitation Only) presentation on “Review of Raman spectral features for soft biomaterials under mechanical deformation” (#11242-26, 02/02/2020) in the Session ‘Optical Elastography and Tissue Biomechanics VII ‘ at the SPIE BiOS Conference, San Francisco, Feb 1-6, 2020.
2. Invited (by Invitation Only) presentation on "Thermodynamics of Pressure-Induced and Shock-Induced Amorphization in Boron Carbide-Unraveling the Mystery Through MD Simulations and Experimental Data", S4: Armor Ceramics - Challenges and New Developments; Session title: Quasi-Static and Dynamic Behavior IV, January 28, 2020; 44th International Conference and Exposition on Advanced Ceramics and Composites conference (ICACC 2020), Daytona Beach, FL,January 26-31, 2020,
3. Invited speaker on “Thermodynamics-based Stability Criteria and Constitutive Modeling of Isotropic Hyperelastic Solids” at the symposium celebrating the seminal contributions of Professor Ravichandran in the field of experimental solid mechanics, and on the occasion of his 60th birthday held at the California Institute of Technology during June 7-8, 2019
4. Invited (by Invitation Only) presentation on “Bonding Structure and Deformation Mechanism in Ultrahard Icosahedral Ceramics", at the 43rd International Conference and Exposition on Advanced Ceramics and Composites (ICACC 2019) 'SYMPOSIUM 10: Ceramics Modeling, Genome and Informatics, Feb 28-31, 2019, Daytona Beach, FL.
5. Conference Plenary Lecture at the “Shock Response of Polymeric Gels and Brain Tissue”, Sixth International Conference on Natural Polymers, (ICNP – 2018) 7-9 December 2018, Kottayam, Kerala, India
6. Invited Presentation (40 min) at the ASME-IMECE 2018 conference “Amorphization in Boron Carbide: Experimenal and Computational Study” Session 12-3-1 (Mechanical Characterization in Extreme Environments-1), Sept 15, 2018, Pittsburg, PA.
7. Conference Keynote Lecture on “Spark Plasma Sintering of Net-shaped Ceramic Pellets and their Large-Scale Manufacturability” 21st International Conference on Advances in Materials and Processing Technologies (AMPT2018), Sept 4-7, 2018, Dublin, Ireland.
8. Invited Presentation (40 min) “Experimental and Computational Spectroscopy for Deciphering Amorphization in Boron Carbide due to Dynamic Loading”, in Dynamic Behavior of Materials VIII – Effect of Microstructure on Dynamic Response II, at TMS 2018, Phoenix, AZ, 13 March 2018.
9. Conference Keynote Lecture (invited) “Bonding, Structure and Deformation Mechanisms in Ultra-Hard Ceramics”, at Ceramics 2018, Rome, 14-15 May, 2018.
10. Invited Plenary Session Speaker at the Corning Glass Summit 2018, June 6-8, 2018, Corning, USA
11. Invited Speaker “Ultrahard Ceramics: Can we make them any harder?” at the Discussion Meeting on “Mechanics/Materials Interface” Evolve Back Resorts, Coorg, Karnataka, India, Feb.18-22, 2018, Organized by the Indian Institute of Science, Bangalore, India.
12. Conference Plenary Presentation “Experimental and Computational Spectroscopy for Characterizing Deformation Modes in Icosahedral Boron-rich Ceramics”, at the International Conference on Molecular Spectroscopy (ICMS 2017), 8-10 December 2017, Kottayam, Kerala, India.
13. Session Keynote Speaker “Deciphering Amorphization in Boron Carbide using Experimental and Computational Spectroscopy” of the Session on ‘Dynamic response and failure of advanced materials -5’, (topic 12-16), Organized by Prof. Luoyu Roy Xu of University of New Mexico, at the ASME-IMECE, Tampa, FL, November 5-9, 2017.
14. Invited speaker at the International Workshop on Field Assistaed Sintering Technology, Pennsylvania State University, Sept 27-29, 2017
15. Invited speaker (40 min) at the International Conference on Advanced Ceramics and Composites (ICACC 2017), symposium on “Armor Ceramics”, Daytona Beach, FL Jan 23-27 (2017).
16. Invited presentation at the INERI meeting at the European Commission Joint Research Center, Institute for Transuranium Elements, Karlsruhe, Germany “Novel Technology for Synthesis of Nuclear Fuels” November 19-20, 2015.

17. Plenary Lecture at the 1st International Conference on Alumina and Other Functional Ceramics (AOFC-2015) "Characterization of Microstructure, Composition, Microresidual Stresses and Phase Transformations in Advanced Structural Ceramics by Raman Spectroscopy" CSIR-Central Glass and Ceramic Research Institute, Kolkata, India, Indian Ceramic Society, 11-13 March 2015.
18. Invited Speaker at the 18th International Symposium on Boron, Borides and Related Materials, " Characterization of Amorphized Zone due to High-Pressure Loading in Boron Carbide", Honolulu, Hawaii, Aug 31-Sept 2014.
19. Invited Lecture at the 5th International Conference on Perspectives in Vibrational Spectroscopy, **"**Raman Spectroscopy for Determination of Macro and Micro Residual Stresses and Structural Disorder in Ceramics" Thiruvananthapuram, Kerala, India, 08-12 July 2014
20. Invited Speaker at the "Dynamic Behavior of Materials VI - TMS/SMD Symposium in Honor of Professor Marc Meyers" Feb 16-20, 2014 TMS Annual Meeting & Exhibition, SanDiego, CA
    a. "Influence of Stress State and Strain Rate on Amorphization in Boron Carbide"
    b. "A Mechanisms Perspective on why Spinel Outperforms Sapphire in Ballistic Tests Despite its Inferior Properties"
21. Keynote Speaker "Experimental and Computational Modeling of Rolling Contact Fatigue", 23rd International Workshop on Computational Mechanics of Materials (IWCMM23), Oct 2-4, 2013, Singapore
22. Invited lecture at the 23rd International Conference on Raman Spectroscopy on "3D mapping of amorphized zone under high pressure loading in boron carbide using Raman spectroscopy" Indian Institute of Science, Bangalore India, Aug 12-17, 2012.
23. Invited presentation on "*Room temperature dislocation mobility in structural ceramics" Plasticity 11,* Puerto Vallarta, Mexico, Jan. 3-8, 2011
24. Invited Presentation on "Dynamic Response of Gelatin Under Compression, Tension, and Shear" IMPLAST 2010, Providence, RI, October, 12-14, 2010
25. Invited Presentation on "Determination of Constitutive Response of Plastically Graded Materials" Bearing Summit by AFRL, Dayton, OH, August 24, 2010
26. Invited Presentation on "Damage propagation in high strength glasses rods due to high velocity ball impact" at the Center for Glass and Ceramic Research Institute, Kolkata, India, Aug 2, 2010.
27. Keynote Presentation on "Damage propagation in high strength glasses rods due to high velocity ball impact" at the Glass & Optical Materials Division Meeting, May 16-19, 2010, Corning, NY.
28. Keynote Presentation on "Ductility in Ultra High Temperature Ceramics During Room Temperature Deformation" International Conference on Computational and Experimental Sciences (ICCES10), Mar 28-31, 2010, Las Vegas, NV.
29. Keynote Presentation on "Dynamic response of gelatin under compression, tension, and shear" International Conference on Computational and Experimental Sciences (ICCES10), Mar 28-31, 2010, Las Vegas, NV.
30. Keynote lecture at the NATO Advanced Research Workshop on "Boron Rich Solids: Sensors for Biological and Chemical Detection, Ultra-High Temperature Composites, Thermoelectrics, and Armor" Orlando, Florida, USA, December 14 - 18, 2009.
31. Plenary speaker at the Interquadrennial Conference of the International Congress on Fracture (IQCICF), Indian Institute of Science, Bangalore, India, August 3-7, 2008.
32. Invited speaker at the Work shop on 'Blast Traumatic Brain Injury' at the MIT Institute for Soldier Nanotechnologies (ISN) in Cambridge, MA 9-10 July 2008.
33. Invited speaker at the International Center for Applied Computational Mechanics (ICACM), Second France-US Symposium on "Materials Under Extreme Loadings: Application to the Penetration and Impact" Rocamadour, France, May 28-30, 2008.

34. Invited plenary speaker at the International Symposium on Indentation Behavior of Materials. Organized by International Advanced Research Center for Powder Metallurgy & New Materials (ARCI), Hyderabad, Feb 3-7, 2008
35. Invited speaker "Characterization of Nanoporous Diatom Frustules Using Nanoindentation" International Conference on Frontiers of Nanoscience and Nanotechnology, Cochin, India, Aug 16-19, (2006).
36. Special lecture at DYMAT-India 2005, Center for Glass and Ceramic Research Institute Kolkata, India.
37. Plenary lecture-11th International School on Continuous Media Mechanics, Urals Branch of Russian Academy of Sciences, Perm, Russia. February 22-March 3, 1997.
38. Invited seminars at Ecole Polytechnique Federal de Lausanne (EPFL), Lausanne, Switzerland, Naval Research Laboratories, Washington DC, University of Texas- Austin, Texas A&M University, University of Houston-Texas, University of California San Diego, Johns Hopkins University, Indian Institute of Technology Madras, Chennai (March 2015); University of Florida, George Washington University, California Institute of Technology, Michigan Technological University, University of Michigan-Ann Arbor, University of Illinois-Urbana Champaign, University of Pennsylvania, The John's Hopkins University, Army Research Laboratory, Eglin Air Force Base, Wright-Patterson Air Force Laboratory, Sandia National Laboratories, Ford Motor Company and General Motors, Indian Institute of Science, Bangalore, India.

Invited Seminars at Universities and Research Institutions (Since 2001)

1. Ecole Polytechnique Federal de Lausanne (EPFL), Lausanne, Switzerland "Constitutive Modeling of Strain Rate Sensitive Polymeric Gels and Biological Tissues" (Sept 20, 2019)
2. Naval Research Laboratories, Washington, DC, "Pressure-induced amorphization in ultrahard ceramics: A thermodynamics-based theory for boron-rich icosahedral ceramics" (Sept 5, 2019)
3. University of Texas, Austin, Department of Aerospace Engineering and Engineering Mechanics, "Pressure-induced amorphization in ultrahard ceramics: A thermodynamics-based theory for boron-rich icosahedral ceramics" (Feb 14, 2019)
4. Texas A&M University, Materials Science and Engineering Department, "Deformation Mechanisms in Ultrahard Ceramics: A Comprehensive Experimental, DFT and MD Investigation," (Oct 8, 2018)
5. University of Houston, Mechanical Engineering Department, "Deformation Mechanisms in Ultrahard Ceramics: A Comprehensive Experimental, DFT and MD Investigation," Houston, TX (Sept 27, 2018)
6. Johns Hopkins University/MEDE/, Baltimore, MD "New insights into Amorphization in Boron Carbide" (Apr 9, 2018)
7. Carleton University, Ottawa, Canada "Experimental and Computational Spectroscopic Studies of High Pressure Induced Amorphization in Boron Carbide" (May 19, 2017)
8. Army Research Laboratories, Aberdeen Proving Ground, MD, "Deciphering links between deformation Behavior and Raman spectra for polymorphic tailoring of boron carbide" (December 14, 2016)
9. University of California San Diego, La Jolla, CA, "Raman Spectroscopy for Characterization of Materials and Phase Transformation in Advanced Structural Ceramics" (April 15, 2016)
10. Johns Hopkins University, Baltinore, MD "Multi-Scale Experimental Investigations for Characterization of Impact Response of Advanced Transparent Materials" (April 5, 2015).
11. Michigan Technological University, Houghton, MI "Cavitation Induced Structural and Neuronal Damage in Brain Tissue- Relevance to TBI" (November 1, 2014).
12. Army Research Laboratories, Aberdeen Proving Ground, Aberdeen, MD, "Cavitation Induced Damage in Brain tissue- Relevance to TBI" (May 28, 2014)
13. Georgia Institute of Technology, Atlanta, GA, "Integrated Experimental and Computational Investigation of Plastically Graded Materials," School of Materials Science and Engineering, (Feb

25, 2014)

14. Army Workshop on Future Research Directions in Solid Mechanics, Johns Hopkins University, Baltimore, MD. “Properties and Performance: Is there a Disconnect in Armor Ceramics?” (Embracing Mechanism-Based Design over Property-Based Design), (Sept 4-6, 2013)
15. Institute for Transuranium Elements, European Commission Joint Research Center, Karlsruhe, Germany, “Fabrication of Novel UO2 Composites using Spark Plasma Sintering” (June 10, 2013)
16. Picattiny Arsenal, Dover NJ, “Infleunce of Strain rate and Pressure on Amorphization in Boron Carbide” (July 20, 2012)
17. Department of Mechanical and Aerospace Engineering, North Carolina State University, Raleigh, NC “Traumatic Brain Injury: An Engineer’s Perspective”, (Apr 19, 2012)
18. Air Force Research Laboratories, Dayton, OH; “Novel Approaches for Characterization of Deformation Modes in High Strength Bearing Steels Subjected to RCF” (Aug 15, 2011).
19. California Institute of Technology, Pasadena, CA. “Characterization of Soft Tissue Surrogates and Brain Tissue for Development of Pressure-Deformation-Injury Maps at High Loading Rates” (Apr 11, 2011)
20. Michigan Technological University, Houghton, MI. “Characterization of Soft Tissue Surrogates and Brain Tissue for Development of Pressure-Deformation-Injury Maps at High Loading Rates” (Apr 25, 2011).
21. University of Florida, Gainesville, FL, “Sensitivity of Scratch Resistance to Grinding-Induced Damage Anisotropy in Brittle Materials” (March 03, 2006).
22. General Motors Tech Center, Warren, MI “Hydroforming of Aluminum Extrusions” Aug 8, 2005
23. Ford Scientific Research Labs, Dearborn, MI “Process Optimization for Hydroforming of Aluminum Extrusions” (Aug 9, 2005)
24. Auto Steel Partnership, Detroit MI, “Process Optimization for Hydroforming of Aluminum Extrusions” (Aug 10, 2005)
25. ME Departmental Seminar at George Washington University, Washington DC, “Modeling of brittle fracture using indentation and Scratch Processes” (May 3rd, 2005).
26. Army Research Laboratory, Aberdeen Proving Grounds, MD on "Constitutive behavior of bulk metallic glasses" (May 4th, 2005).
27. Presented two departmental seminar at the University of Puerto Rico, Mayaguez (Oct, 2004)
28. Ford Motor Company, Dearborn , MI on “High Strain rate Characterization of low density materials” (June 2004)
29. Hydro Aluminum Technology Center (Norsk-Hydro) Holland, MI, “Hydroforng of Aluminum extrusions” (Nov 2004)
30. Sandia National Laboratories, Albuquerque, NM “Brittle fracture during indentatiuon and scratch processing: Experiments and numerical modeling” (March 11, 2003).
31. Oak Ridge National Labs, OakRidge, TN "Investigation into brittle fracturd during indentation and scratch testing: Experiments and modeling" (Aug 14, 2003).
32. Oak Ridge National Labs, OakRidge, TN, "Wear Characterization of candidate structural ceramics for gun barrell applications” (Aug 15, 2003).
33. Army Research laboratory on “Wear Characterization of candidate structural ceramics for gun barrel liners using single-grit scratching” Metals and Ceramics Division, Aberdeen Proving Grounds, MD, (April 10, 2003).
34. L&L Products, Romeo MI., “Static and Dynamic Properties of Structural Foams" (Aug 20, 2003).
35. ME Departmental Seminar at the University of Pennsylvania on “Brittle fracture during indentatiuon and scratch processing: Experiments and numerical modeling” (17 Oct 2002).
36. Army Research Laboratory, Aberdeen Proving Grounds, MD on “Thermodynamic and Mechanical behavior of metallic glasses” on (16 Oct 2002).
37. Army Research Laboratory, Aberdeen Proving Grounds “Dynamic Indentation on Brittle Materials: Experiments and Modeling” (Oct 2001).

Abstracts and Conference Presentations (Since 2001)

1 "Shock and High-Pressure Response of Boron Carbide: Experiments and Constitutive Modeling" American Society of Mechanical Engineers - International Mechanical Engineering Congress and Exposition (ASME-IMECE 2019), Nov 11-14, 2019, Salt Lake City, Utah, USA

2 A Visco-hyperelastic Constitutive Model for Strain Rate Sensitive Soft Materials" American Society of Mechanical Engineers, International Mechanical Engineering Congress and Exposition (ASME-IMECE 2019), Nov 11-14, 2019, Salt Lake City, Utah, USA

3 "Thermodynamics-Based Stability Criteria and Constitutive Modeling of Isotropic Hyperelastic Solids", American Society of Mechanical Engineers, International Mechanical Engineering Congress and Exposition (ASME-IMECE 2019), Nov 11-14, 2019, Salt Lake City, Utah, USA

4 "A Visco-hyperelastic Constitutive Model for Strain Rate Sensitive Soft Materials" (SES 2019) Oct 13-15,2019, St Louis, MO, USA.

5 "Hyperelastic Constitutive Modeling of Agarose Hydrogel Based on Primary Deformation Modes" Society of Engineering Science (SES 2019) Oct 13-15,2019, St Louis, MO, USA

6 "Molecular Dynamics Simulation of Sock Induced Temperature Rise and Loss of Shear Strength in Boron Carbide" 29th International Workshop on Computational Mechanics of Materials (IWCMM29) Centre for Advanced Academic Studies Dubrovnik, Croatia, September 15-18, 2019.

7 "Characterization and Modeling of SiC/SiC Tubular Composites" International Conference on Composite Materials (ICCM-22), Aug 11-16, 2019, Melbourne, Australia.

8 "Shock and High Pressure Response of Boron Carbide" SEM Annual Conference & Exposition on Experimental & Applied Mechanics, The Peppermill, Reno, NV USA, June 3-6, 2019

9 "Quasi-static and dynamic simple shear characterization of soft polymers" 2019 Annual Conference of the Society for Experimental Mechanics, Reno, NV June 3-6, 2019.

10 "Dynamic Simple Shear Characterization and Dynamic Viscosity of Polymeric Gels" Mach Conference, Apr 3-5, 2019, Annapolis, MD

11 "Intrinsic Hardness of Boron Carbide: Influence of polymorphs, stoichiometry and Bonding Structure" Mach Conference, Apr 3-5, 2019, Annapolis, MD

12 "Bonding Structure and Deformation Mechanism in Ultrahard Icosahedral Ceramics" The 43rd International Conference and Exposition on Advanced Ceramics and Composites (ICACC 2019), Daytona Beach, FL, Jan 28-31, 2019

13 "Limitations of Tensile Test for Modeling Complex Defformations Hyperelastic Materials" ASME-IMECE 2018-89014, Nov12-15, 2018, Pittsburg, PA.

14 "Comparison of Amorphization Behavior in Boron Carbide and Boron Suboxide". Symposium: S4: Armor Ceramics-Challenges and New Developments, Session: Materials Characterization III, 42nd International Conference and Exposition on Advanced Ceramics and Composites, Jan 21-26, 2018, Daytona Beach, FL.

15 "An Extended Mohr-Coulomb Model for Ultrahigh Pressure Response of Structural Ceramics" Symposium: S4: Armor Ceramics-Challenges and New Developments. Session: Quasi-static and Dynamic Behavior I , 42nd International Conference and Exposition on Advanced Ceramics and Composites, Jan 21-26, 2018, Daytona Beach, FL.

16 "Experimental and Computational Spectroscopy for Characterizing Deformation Modes in Icosahedral Boron-rich Ceramics" Plenary Lecture at the International Conference on Molecular Spectroscopy (ICMS 2017), 8-10 December 2017, Kottayam, Kerala, India

17 "Deciphering the Link between Deformation Behavior and Raman Spectra for Polymorph-Level Tailoring of Boron Carbide: ASME-IMECE 2017, Tampa, FL Nov 03-09, 2017

18 "Wave propagation in Ballistic Gelatine" ASME-IMECE 2017, Tampa, FL Nov 03-09, 2017

19 "Cavitation Results in Brain Tissue Damage" ASME-IMECE 2017, Tampa, FL Nov 03-09, 2017

20 "Dynamic Response of Boron Suboxide" ASME-IMECE 2017, Tampa, FL Nov 03-09, 2017

21 "Ultrahigh pressure deformation and Raman spectra of Boron carbide" 15th Conference and

Exhibition of the European Ceramic Society (ECerS), Budapest, Hungary, July 9-13, 2017.

22 “Deciphering the link between Raman spectrum and deformation behavior of boron carbide polymorphs” Mach Conference, Annapolis, MD Apr 05-07, 2017.

23 “Deciphering the influence of pressure and strain rate on fracture strength of structural ceramics” ASME-IMECE2016, Phoenix, AZ, Nov 13-17, 2016

24 "Assessing the Influence on Confinement Pressure and Strain Rate on Fracture Strength of Ceramics" Materials Science & Technology, Salt Lake City Oct 23-27, 2016

25 "Spark Plasma Sintering and Largescale Manufacturability of Nuclear Fuel Pellets” Materials Science & Technology, Salt Lake City Oct 23-27, 2016

26 "Wave Propagation in Ballistic Gelatin" Materials Science & Technology, Salt Lake City, UT, Oct 23-27, 2016

27 “Cavitation-Induced damage in brain tissue and surrogates”, 17th International Conference on Experimental Mechanics (ICEM17), Rhodes, Greece, July 3 - 7, 2016.

28 “Rate Dependent Amorphization Behavior of Boron Carbide”, 17th International Conference on Experimental Mechanics (ICEM17), Rhodes, Greece, July 3 - 7, 2016.

29 “Which one has More Influence on Failure Strength of Ceramics: Pressure of Strain Rate?” Mach Conference, Apr 5-8, 2016, Annapolis, MD.

30 “Influence of Simulated Blast Overpressure and Underpressure Components on Brain Tissue”, Society of Experimental Mechanics XIII International Congress & Exposition in Orlando Florida, June 6-9, 2016.

31 “Which one has More Influence on Fracture Strength of Ceramics: Pressure or Strain Rate?” Society of Experimental Mechanics XIII International Congress & Exposition in Orlando Florida, June 6-9, 2016.

32 “Predicting Raman Spectra of Boron Carbide Polymorphs” Mach Conference, Apr 5-8, 2016, Annapolis, MD.

33 "Transmission Electron Microscopy of Amorphization Band Structure due to Rate-Dependent Indentation on Micro- and Nano-Grained Boron Carbide” (ICACC-S4-024-2016) 40th International Conference and Exposition on Advanced Ceramics and Composites in Daytona Beach, FL, Jan 25-29, 2016.

34 “Prediction of Raman Spectra and Shear Resistance of Boron Carbide using Density Functional Perturbation Theory” (ICACC-S4-021-2016) 40th International Conference and Exposition on Advanced Ceramics and Composites in Daytona Beach, FL, Jan 25-29, 2016.

35 “Comparison of Amorphized Zones Beneath Static and Dynamic Indentations in Boron Carbide”. (ICACC-S4-030-2016) 40th International Conference and Exposition on Advanced Ceramics and Composites in Daytona Beach, FL, Jan 25-29, 2016.

36 “Rate-dependent Hardness and Amorphization Response of Nano-grained Boron Carbide” (ICACC-S4-P044-2016) 40th International Conference and Exposition on Advanced Ceramics and Composites in Daytona Beach, FL, Jan 25-29, 2016.

37 “Characterization of Biaxial Residual Stresses and Phase Transformations in Ceramics using Raman Spectroscopy” 2015 European Solid Mechanics Conference (ESMC2015), Madrid, July 6-10, 2015

38 “Damage in Brain Tissue due to Single Bubble Cavitation Shock” SEM Annual Conference and Exposition on Experimental and Applied Mechanics, Costa Mesa, CA, June 8-11, 2015

39 “Measurement of Residual Stresses in B4C-SiC-Si Ceramics Using Raman Spectroscopy” SEM Annual Conference and Exposition on Experimental and Applied Mechanics, Costa Mesa, CA, June 8-11, 2015

40 “Determination of Residual Stress Distribution in Reaction-Bonded Multiphase Ceramics using Raman Spectroscopy” 2015 Mach Conference, Annapolis, MD, April 8-10, 2015

41 “Effective S-N Diagrams for Rolling Contact Fatigue of Case Hardened Bearing Steels,” 2015 STLE Annual Meeting and Exhibition, May 17- 21, 2015, Dallas, Texas.

42 “Effect of the Carbide Microstructure on Rolling Contact Fatigue behavior of Case Hardened Bearing Steels, 2015 STLE Annual Meeting and Exhibition, May 17- 21, 2015, Dallas, Texas.

43 “Cavitation Induced Damage in Brain Tissue” Mach Conference, Annapolis, MD, April 8-10, 2015

44 “Batch Processing of UO2 pellets using SPS”, 39th International Conference & Exposition on Advanced Ceramics & Composites (39th ICACC), Jan 25-30, 2015, Daytona Beach, FL.

45 "Determination of Biaxial Residual Stress in Silicon Carbide Using Raman Spectroscopy" 39th International Conference & Exposition on Advanced Ceramics & Composites (39th ICACC), Jan 25-30, 2015, Daytona Beach, FL.

46 “Rate Dependent Short Beam Shear Testing of 3D Composites”1st International Conference on Mechanics of Composites, Stony Brook University, Long Island, NY, June 8-12, 2014.

47 “Determination of Surface Bi-Axial Stresses Using Raman Spectroscopy” SEM 2014 Annual Conference & Exposition, June 2-5, 2014 in Greenville, SC.

48 “Dynamic Experiments for Investigation of Brain Cell Damage Due to High Rate Loading-Relevance to TBI” SEM 2014 Annual Conference & Exposition, June 2-5, 2014 in Greenville, SC.

49 “Determination of rate dependent amorphization volume beneath indentation and impact processes” Mach Conference, April 9-11, 2014, Annapolis, MD.

50 “Cavitation induced shock behavior of gels and brain tissue using Hopkinson Pressure Bar” Mach Conference, April 9-11, 2014, Annapolis, MD.

51 "Resolving residual stresses at microscale" Mach Conference, April 9-11, 2014, Annapolis, MD.

52 “A novel technique for biaxial residual stress determination in SiC" Mach Conference, April 9-11, 2014, Annapolis, MD.

53 "Fabrication and Properties of High Thermal Conductivity UO2, UO2-SiC, UO2-Diamond, and UO2-CNT composites using Spark Plasma Sintering" 2014 TMS Annual Meeting & Exhibition, San Diego, CA Feb 16-20, 2014.

54 "Influence of Stress State and Strain Rate on Amorphization in Boron Carbide" Symposium on Dynamic Behavior of Materials VI – An SMD Symposium in Honor of Professor Marc Meyers, 2014 TMS Annual Meeting & Exhibition, San Diego, CA Feb 16-20, 2014.

55 "A Mechanisms Perspective on why Spinel Outperforms Sapphire in Ballistic Tests Despite its Inferior Properties” Symposium on Dynamic Behavior of Materials VI – An SMD Symposium in Honor of Professor Marc Meyers, 2014 TMS Annual Meeting & Exhibition, San Diego, CA Feb 16-20, 2014.

56 “Evolution of Microstructure and Mechanical Properties During Rolling Contact Fatigue of Graded High Strength Bearing Steels” 2014 TMS Annual Meeting & Exhibition, San Diego, CA Feb 16-20, 2014.

57 "Processing of High Thermal Conductivity UO2-Composites using Spark Plasma Sintering (SPS)" 38th International Conference on Advanced Ceramics and Composites, Daytona Beach, FL, January 26-29, 2014

58 “Influence of Stress State and Strain Rate on Amorphization Zone Size in Boron Carbide” 23rd International Workshop on Computational Mechanics of Materials (IWCMM 23) 2-4 October 2013, Singapore

59 “Evolution of Hardened and Softened Regions in RCF Affected Zones in M50NiL Rods” Iberian Conference in Tribology IBERTRIB2013, Porto, Portugal, June20-21, 2013.

60 "Evolution of Microstructure and Properties During Rolling Contact Fatigue in Ultra-high Strength Graded Steels" 2013 SEM Annual Conference, Chicago, IL June 3-5 (2013)

61 "Cavitation Induced Structural and Neuronal Damage in Brain Tissue Slices: Relevance to TBI" 2013 SEM Annual Conference, Chicago, IL June 3-5 (2013)

62 “True hardness of polycrystalline boron carbide: An assessment of loss of crystallinity and implications to armor”, 2013 Mach conference, Apr 9-12, Annapolis, MD

63 “Understanding multi-hit resistance of sapphire through indentation and impact testing”, 2013 Mach

conference, Apr 9-12, Annapolis, MD

64 "Comparison of SPS versus Conventional Sintering of Accident Tolerant UO2-Composite Fuel Pellets" "LWR Fuel Performance/Top Fuel" Charlotte, NC, 15-19, Sept 2013.

65 "3D Mapping of Amorphization Zone in Boron Carbide Using Raman Spectroscopy", TMS 2013 Annual Meeting, March 3-7, 2013, San Antonio, TX.

66 "Cavitation Induced Structural and Neuronal Damage in Brain Tissue", TMS 2013 Annual Meeting, March 3-7, 2013, San Antonio, TX.

67 "Experimental Evaluation of Subsurface Damage Due to Rolling Contact Fatigue in Case Hardened Bearing Steel via Micro-Indentation Mapping", TMS 2013 Annual Meeting, March 3-7, 2013, San Antonio, TX.

68 "Numerical Evaluation of Surface and Subsurface Damage Due to Rolling Contact Fatigue in Case Hardened M50-NiL Bearing Steel" TMS 2013 Annual Meeting, March 3-7, 2013, San Antonio, TX.

69 "Fabrication of Enhanced Thermal Conductivity UO2-SiC Composites Using Spark Plasma Sintering" TMS 2013 Annual Meeting, March 3-7, 2013, San Antonio, TX.

70 ICACC-S4-024-2013, "Can We Truly Measure the Hardness of Crystalline Boron Carbide? - New Insights into the Spatial Distribution of Amorphized Zone" January 29, 2013. 37th International Conference & Exposition on Advanced Ceramics & Composites (ICACC), Daytona Beach, FL.

71 ASME-IMECE2012-85551 "Investigation of Post Yield Hardening in Ceramics using Nano Indentation", Nov 11-15, 2012, Houston, TX.

72 ASME-IMECE2012-85548 "Role of Pressure and Strain Rate on Amorphization in Boron Carbide" Nov 11-15, 2012, Houston, TX.

73 ASME-IMECE2012-85547 "Why Spinel Outperforms Sapphire in Ballistic Tests Despite its Inferior Properties- A Mechanisms Perspective" Nov 11-15, 2012, Houston, TX.

74 ASME-IMECE2012-85558"Processing-Structure-Property Relationships in SPS Sintered High Thermal Conductivity UO2-SiC Pellets" Nov 11-15, 2012, Houston, TX.

75 "A Fresh look at why Spinel Outperforms Sapphire During Ballistic Tests" SEM 2012 XII International Congress & Exposition on Experimental & Applied Mechanics, Costa Mesa, CA, June 11-14, 2012.

76 "Role of Pressure and Strain Rate on Structural Amorphization in Boron Carbide" SEM 2012 XII International Congress & Exposition on Experimental & Applied Mechanics, Costa Mesa, CA, June 11-14, 2012.

77 "Pressure-deformation-injury Maps for Brain Tissue Subjected to High Rate Loading" SEM 2012 XII International Congress & Exposition on Experimental & Applied Mechanics, Costa Mesa, CA, June 11-14, 2012.

78 "Structure and Property Relationship in Spark Plasma Sintered UO2 Pellets"2012 TMS Annual Meeting & Exhibition, Orlando, FL, March 12-15, 2012

79 "Investigation of Room Temperature Dislocation Mobility in Metal Diborides (ZrB2) Using Nano and Micro Indentation" 2012 TMS Annual Meeting & Exhibition, Orlando, FL, March 12-15, 2012

80 "Evolution of Microstructure and Mechanical Properties during Rolling Contact Fatigue in High Strength Case-Hardened and Through-Hardened Steels" 2012 TMS Annual Meeting & Exhibition, Orlando, FL, March 12-15, 2012

81 "A fresh look at why does spinel outperforms sapphire during ballistic tests?": ICACC-S4-032-2012; Jan 22-27, 2012, 36th ICACC in Daytona Beach, FL

82 "Role of Pressure and Strain Rate on Structural Amorphization in Boron Carbide": ICACC-S4-P049-2012, Jan 22-27, 2012, 36th ICACC in Daytona Beach, FL

83 "Structure and Property Relationship in Spark Plasma Sintered UO2 pellets" ICACC-S13-009-2012, Jan 22-27, 2012, 36th ICACC in Daytona Beach, FL

84 "Investigation of Room Temperature Dislocation Mobility in metal diborides (ZrB2)using Nano Indentation and Confinement Studies": ICACC-S12-044-2012, Jan 22-27, 2012, 36th ICACC in

Daytona Beach, FL

85 "Quantification of High Loading Rate Induced Structural and Neuronal Damage in Live Brian Tissue Slices" 4th International Conference on the Mechanics of Biomaterials and Tissues (ICMOBT 2011), Dec 11-14, 2011, Waikoloa Beach Marriott Resort, Hawaii.

86 "Evaluation of Dislocation Mobility and Hardening using Nano Indentation in Structural Ceramics" ASME-IMECE2011-62690, Nov 11-17, 2011 Denver, Colorado.

87 "Loading Velocity Dependent Permeability in Agarose Gel under Compression" ASME-IMECE2011-62687, Nov 11-17, 2011 Denver, Colorado.

88 "Damage Propagation Due to Ball Impact on Chemically Strengthened Glass" ASME- IMECE2011-62778, Nov 11-17, 2011 Denver, Colorado.

89 "Influence of ultrahigh surface residual streses on indentation hardness and impact damage propagation in chemicaly strengthened glass" The American Ceramic Society's 113th Annual Meeting and MS&T 11, October 16-20, 2011 Columbus, OH

90 "Nano- and Micro-Indentation Investigations of Room Temperature Dislocation Mobility in Ceramics" in Hardness across the Multi-Scales of Structure and Loading Rate: Stress-Strain Relations, The American Ceramic Society's 113th Annual Meeting and MS&T 11, October 16-20, 2011 Columbus, OH

91 "Relationship between Static and Dynamic Indentation Response and Impact-Induced Damage in Transparent Materials" in Hardness across the Multi-Scales of Structure and Loading Rate: Stress-Strain Relations, The American Ceramic Society's 113th Annual Meeting and MS&T 11, October 16-20, 2011 Columbus, OH

92 "Loading Rate Dependent Indentation Hardness: Anomalies in Amorphous Metals and High Strength Ceramics" in Symposium on Hardness across the Multi-Scales of Structure and Loading Rate: Stress-Strain Relations, The American Ceramic Society's 113th Annual Meeting and MS&T 11, October 16-20, 2011 Columbus, OH

93 "Low Velocity Impact Response of 3D Woven Composites", 2011 SEM Annual Conference & Exposition on Experimental &Applied Mechanics, Mohegan Sun, Uncasville, Connecticut, June 13-16, 2011.

94 "Response of Magnesium Spinel under Indentation and Impact Loads" 2011 SEM Annual Conference & Exposition on Experimental &Applied Mechanics, Mohegan Sun, Uncasville, Connecticut, June 13-16, 2011.

95 "A Technique for Dynamic Deformation of Submerged Brain Tissue Slices" 2011 SEM Annual Conference & Exposition on Experimental &Applied Mechanics, Mohegan Sun, Uncasville, Connecticut, June 13-16, 2011.

96 "Damage Propagation Due to Ball Impact on Chemically Strengthened Glass" "Constitutive Response of Plastically Graded Materials" 2011 SEM Annual Conference & Exposition on Experimental &Applied Mechanics, Mohegan Sun, Uncasville, Connecticut, June 13-16, 2011.

97 "Crack Evolution in Sapphire Under Static and Dynamic Loads" 2011 SEM Annual Conference & Exposition on Experimental &Applied Mechanics, Mohegan Sun, Uncasville, Connecticut, June 13-16, 2011.

98 "Determination of plastic response of plastically graded case hardened bearing steels" 2011 ASTM International Symposium on Rolling Element Bearings and Bearing Technology Exhibit, April 13th-15th 2011, Anaheim, CA

99 "Dynamic indentation response of chemically strengthened ion-armor glass" 35th International Conference on Advanced Ceramics & Composites (ICACC), Daytona Beach, FL Jan 23-28, 2011.

100 "Damage propagation due to interacting Vickers indentation on basal and pyramidal planes of sapphire single crystal : implications to multi-hit resistance" 35th International Conference on Advanced Ceramics & Composites (ICACC), Daytona Beach, FL Jan 23-28, 2011

101 "Monotonic stress-strain response and cyclic micro plasticity response induced by rolling contact fatigue (RCF) in plastically graded materials (PGMs)" Plasticity 11, Puerto Vallarta, Mexico, Jan. 3-

8, 2011

102 "Room temperature dislocation mobility in structural ceramics" The 17th International Symposium on Plasticity & Its Current Applications, Puerto Vallarta, Mexico, Jan. 3-8, 2011

103 "Dynamic response of gelatin under compression, tension, and shear" ASME- IMECE2010-37533, November 14-18, 2010, Vancouver, Canada

104 "Determination of Stress-Strain Response of Plastically Graded Surfaces" ASME- IMECE2010-37568, November 14-18, 2010, Vancouver, Canada

105 "Determination of Constitutive Response of Plastically Graded Materials" IMPLAST 2010, Providence, RI, October 12-14, 2010

106 "Dynamic response of gelatin under compression, tension, and shear" IMPLAST 2010, Providence, RI, October 12-14, 2010

107 "Tensile Response of In-tact and Notched Agarose Gel Specimens at Various Concentrations" SEM Annual Conference & Exposition on Experimental and Applied Mechanics, Indianapolis, Indiana, June 7-10, 2010.

108 "High Rate Shear Response of Gelatin", SEM Annual Conference & Exposition on Experimental and Applied Mechanics, Indianapolis, Indiana, June 7-10, 2010.

109 "Room Temperature Dislocation Mobility in Ceramics", SEM Annual Conference & Exposition on Experimental and Applied Mechanics, Indianapolis, Indiana, June 7-10, 2010.

110 "Plasticity in Ultrahigh Temperature Ceramics", 34th International Conference & Exposition on Advanced Ceramics & Composites (ICACC), January 18-23, 2010, Daytona Beach, Florida

111 "Monotonic stress-strain response of plastically graded materials" ASME-IMECE-2009, Buena vista, FL Nov 13-19.

112 "Cyclic stress-strain response of plastically graded materials" ASME-IMECE-2009, Buena vista, FL Nov 13-19.

113 "Dynamic response of gelatin in compression, tension and shear at high rates" ASME-IMECE-2009, Buena vista, FL Nov 13-19

114 "High Shear Rate Behavior of Gelatin Using Split Hopkinson Bar" SEM Annual Conference & Exposition on Experimental and Applied Mechanics, Albuquerque, New Mexico, June 1-4, 2009.

115 "Scratch-Induced Deformation and Residual Stress in a Ultrahigh Temperature Ceramic" SEM Annual Conference & Exposition on Experimental and Applied Mechanics, Albuquerque, New Mexico, June 1-4, 2009.

116 "Rate sensitivity of indentation hardness and uniaxial compressive strength of ultra-high temperature ZrB2-SiC composite" 33rd International Conference & Exposition on Advanced Ceramics & Composites (ICACC), January 18-23, 2009, Daytona Beach, Florida.

117 "Dynamic Indentation Fracture Toughness of Advanced Ceramics," 33rd International Conference & Exposition on Advanced Ceramics & Composites (ICACC), January 18-23, 2009, Daytona Beach, Florida.

118 "TEM Investigation of plastic deformation in an ultra high temperature ZrB2-SiC Composite" 33rd International Conference & Exposition on Advanced Ceramics & Composites (ICACC), January 18-23, 2009, Daytona Beach, Florida

119 "Dynamic Stress Induced Structural Phase Transformation in Boron Carbide" ASME-IMECE, Boston, MA Nov 2-7, 2008.

120 "Scratch-Induced Microplasticity, Microcracking and Residual Stresses in ZrB2-SiC" Materials Science and Technology 2008 Conference & Exhibition, Pittsburgh, PA Oct 5-9, 2008.

121 Shearband Evolution under Dynamic Loading in Bulk Metallic Glasses," Materials Science and Technology 2008 Conference & Exhibition, Pittsburgh, PA Oct 5-9, 2008.

122 "Rate Dependent Fracture in Advanced Ceramics due to Indentation and Scratch Processes" ***Invited Lecture***, Inter Quadrennial Congress on International Conference on Fracture (IQCICF), Indian Institute of Science, Bangalore, India, Aug 4-7, 2008.

123 “Dynamic Indentation Response of Bulk Metallic Glasses” SEM Annual Conference & Exposition on Experimental and Applied Mechanics, Rosen Plaza Hotel, Orlando, Florida, June 2 - 5, 2008.

124 “Quasistatic and Dynamic Crushability of Structural Polymeric Foams in Rigid Confinement” SEM Annual Conference & Exposition on Experimental and Applied Mechanics, Rosen Plaza Hotel, Orlando, Florida, June 2 - 5, 2008.

125 “Scratched Induced Deformation and Residual Stress Measurements in ZrB2-SiC Composite” SEM Annual Conference & Exposition on Experimental and Applied Mechanics, Rosen Plaza Hotel, Orlando, Florida, June 2 - 5, 2008.

126 “Structural Phase Transformation During Dynamic Indentation of Fine Grained Boron Carbide” SEM Annual Conference & Exposition on Experimental and Applied Mechanics, Rosen Plaza Hotel, Orlando, Florida, June 2 - 5, 2008.

127 “Density Dependency of the Mechanical Behavior of Sandwich Core Materials SEM Annual Conference & Exposition on Experimental and Applied Mechanics, Rosen Plaza Hotel, Orlando, Florida, June 2 - 5, 2008.

128 “Dynamic Indentation Response of Advanced Structural Materials” Second US-France ICACM conference on "MATERIALS UNDER EXTREME LOADINGS - APPLICATION TO PENETRATION AND IMPACT" Rocamadour, France, 28-30 May 2008.

129 “Dynamic indentation response of Advanced Materials” International symposium on Indentation Behavior of Materials, Feb 3-7, 2008, Hyderabad, India, Organized by International Advanced Research Center (ARCI) for Powder Metallurgy & New Materials (ARCI), Hyderabad, India.

130 “Dynamic Stress-Induced Structural Phase Transformation in Boron Carbide” (ICACC-S4-028-2008), 32nd International Conference & Exposition on Advanced Ceramics & Composites, Daytona Beach, FL, Jan 26-30, 2008.

131 “Dynamic Indentation and Nanoscratch Response of ZrB2-5wt% SiC Composite” (ICACC-S1-030-2008), 32nd International Conference & Exposition on Advanced Ceramics & Composites, Daytona Beach, FL, Jan 26-30, 2008.

132 “Estimation of Design Parameters for Split Hopkinson Pressure Bar for Dynamic Testing of Soft Cellular Materials” ASME International Mechanical Engineering Congress and Exposition, Nov 11-15, 2007, Seattle, WA.

133 “Structural Phase Transformation and Fracture Evolution during Dynamic Deformation of Boron Carbide” ASME International Mechanical Engineering Congress and Exposition, Nov 11-15, 2007, Seattle, WA.

134 “Influence of Strain Rate and Normal Pressure on Shear Band Evolution in Bulk Metallic Glasses: Experiments and modeling” 17th Army Symposium on Solid Mechanics, Baltimore, MD, Apr 02-05, 2007.

135 “Shearband Patterns under Static and Dynamic Indentations in Bulk Metallic Glasses” Symposium on Bulk Metallic Glasses IV, 2007 TMS Annual Meeting & Exhibition, Orlando, FL, Feb. 25 - March 1, 2007.

136 "Characterization of Bulk Metallic Glasses under Static Indentation, Dynamic Indentation and Scratch Process" Symposium on Dynamic Behavior of Materials, 2007 TMS Annual Meeting & Exhibition, Orlando, FL, Feb. 25 - March 1, 2007.

137 “Static and Dynamic Indentation Response of Fine Grained Boron Carbide” Dynamic Behavior of Materials Symposium on Dynamic Behavior of Materials, 2007 TMS Annual Meeting & Exhibition, Orlando, FL, Feb. 25 - March 1, 2007.

138 “Design Space Exploration for Dynamic Testing of Foams in Split Hopkinson Pressure Bar” Symposium on Dynamic Behavior of Materials, 2007 TMS Annual Meeting & Exhibition, Orlando, FL, Feb. 25 - March 1, 2007.

139 “Static and Dynamic Indentation response of Fine Grained Boron Carbide,” International Conference on Advanced Ceramic Composites, American Ceramic Society, Daytona Beach, FL Jan 21-25, 2007, Paper No. ICACC-S4-042-2007.

140 “Scratch Resistance of Longitudinally and transversely Ground Structural Ceramics” International Conference on Advanced Ceramic Composites, American Ceramic Society, Daytona Beach, FL Jan 21-25, 2007. Paper No. ICACC-S1-059-2007.

141 “Characterization of Viscoelastic Properties of a Polymer Hopkinson Bar Using Iterative Deconvolution in the Time Domain”, ASME/IMECE2006, Chicago, IL, Nov 6-11, (2006)

142 “Numerical Modeling of Cleavage Facets Formation in Ceramics,” ASME/IMECE2006, Chicago, IL, Nov 6-11 (2006).

143 “Analysis of Berkovich Nanoindentation on Nonoporous Diatom Frustules”, ASME/IMECE2006, Chicago, IL, Nov 6-11 (2006).

144 “Negative Rate Sensitivity of Indentation Hardness in Bulk Metallic Glasses”, ASME/IMECE2006, Chicago, IL, Nov 6-11 (2006).

145 “Sensitivity of Scratch Resistance to Grinding-Induced Damage Anisotropy in Silicon Nitride”, ASME/IMECE2006, Chicago, IL, Nov 6-11 (2006).

146 “Characterization of Nanoporous diatom Frustules using Nanoindentation” NANO2006, Eighth International Conference on Nanostructured Materials, Indian Institute of Science, Bangalore, India, Aug 20-25, (2006).

147 “Characterization of Nanoporous diatom Frustules using Nanoindentation” International Conference on Frontiers of Nanoscience and nanotechnology, Cochin, India, Aug 16-19, (2006).

148 “Dynamic Indentation Response of Ultra fine grained Boron Carbide” International Conference on Computational and Engineering Sciences (ICCES05), Chennai, India , Dec 1-10, (2005).

149 “Dynamic Behavior of Materials” DYMAT05 –India, Dec 12, 2005, Kolkata, India.

150 “Shearband formation in bulk metallic glasses under dynamic indentation and scratch processes” ASME/IMECE05, Orlando, Florida, November 6-11, 2005.

151 “Dynamic Response of Heat Expandable Structural Foams under multiaxial loading,” ASME/IMECE05, Orlando, Florida, November 6-11, 2005.

152 “Static and Dynamic Indentation Fracture of Nanostructured Ceramics”, ASME/IMECE05, Orlando, Florida, November 6-11, 2005.

153 “Quasistatic and Dynamic Crushability of structural foams under rigid confinement” ME/IMECE05, Orlando, Florida, November 6-11, 2005.

154 “Shearband formation beneath a Vickers indentation” TMS meeting San Francisco, February 14-17, 2005.

155 “Scratch Resistance of machined ceramics,” American Ceramic Society, Cocoa beach, Florida, Jan 24-28, 2005.

156 “Static and dynamic indentation response of nanostructured boron carbide,” American Ceramic Society, Cocoa beach, Florida, Jan 24-28, 2005.

157 “Influence of lateral confinement on dynamic damage evolution during uniaxial compressive response of brittle solids, ASME IMECE-2004, Anaheim, CA, November 15-20, 2004.

158 “Operational wear and friction in MEMS devices,” ASME IMECE-2004, Anaheim, CA, November 15-20, 2004.

159 “Crushability of Polymer structural foams in uniaxial loading under rigid confinement”, ASME IMECE-2004, Anaheim, CA, November 15-20, 2004.

160 “Negative rate sensitivity of fracture strength in metallic glasses”, ASME IMECE-2004, Anaheim, CA, November 15-20, 2004.

161 “A new Scratch resistance measure for Structural ceramics” Society of Engineering Science, Lincoln, Nebraska, October 10-13, 2004.

162 “Thermodynamic and mechanical behavior of hafnium and zirconium based bulk metallic glasses" International Conference in Mechanics (ICM-9), Geneva, Switzerland, May 25-29 (2003).

163 “Mechanical behavior of Hf/Zr bulk metallic glasses using Nano Indentation” International Conference on Mechanical Behavior of Materials (ICM-9), Geneva, Switzerland, May 25-29, 2003.

164 Two poster presentations by students at MRS Fall meeting, Dec. 3rd., 2003, Boston, MA.
-Hao Li and G. Subhash "Mechanical Properties of Zr/Hf Based Bulk Metallic Glasses"
-Hongwen Zhang and G. Subhash, "Thermodynamic Behavior of Zr/Hf Based Bulk Metallic Glasses" .

165 "Determination of ductile and brittle modes of material removal using single-grit scratching**"** Society of Engineering Science, Penn State, October 14-16, 2002.

166 "Wear Characterization of structural Ceramics using single-grir scratching" 27th American Ceramic Society Conference, Cocoa Beach, Fl Jan 25-30, (2003).

167 "Dynamic Damage Evolution in Brittle Solids under Static and Dynamic Confinement in Uniaxial Loading" 16th Army Symposium in Solid Mechanics, Charleston, SC, May 4-7 (2003)

168 "Analysis of interacting Vickers Indentations" 7th American Ceramic Society Conference, Cocoa Beach, FL Jan 25-30, (2003)

169 "Determination of ductile and brittle modes of material removal using single-grit scratching" Society of Experimental Mechanics, Milwaukee, WI, May 25-30, (2002).

170 "A Novel Averaging scheme for heterogeneous nanostructured materials" ASME AMD/MD Summer Conference, San Diego, CA June 27-29, (2001).

Externally Funded Awards/Grants/Contracts

1. *"Multiaxial Failure Envelopes and Uncertainty Quantification of Nuclear-Grade SiCf/SiC Woven Ceramic Matrix Tubular Composites"* Ghatu Subhash (PI), Bhavani Sankar and Raphael Haftka**, DOE-Nuclear Energy University Programs, $800,000**, 10/01/2018 – 09/30/2021. Award Number: DE-NE0008773
2. *"Measurement of Contractility-induced Residual Stress for Tissue Engineering*", Malisa Sarntinoranont (PI), Chelsey Simmons and Ghatu Subhash, **National Science Foundation $514,363,** 08/15/2018-07/31/2021. Award Number (FAIN) 1762791
3. *"Experimental and Computational Investigations of Deformation Behavior of Icosahedral Boron-Rich Ceramics"* G. Subhash (PI), **Army Research Office**, **$455,800,** 12/10/2017-12/09/20.
4. *"Evaluation of Advanced Ceramic Materials for Dynamic Applications*" G. Subhash (PI), **Department of the Army, $699,782,** 06/09/16-06/08/20.
5. *"Shockwave Propagation and Dynamic Fracture of Hydrogels via Integrated Computational and Experimental Studies"* D. Spearot (PI) and G. Subhash, **National Science Foundation, $444,209,** 08/01/16-07/31/2020.
6. "Acquisition of EMCCD Raman Detector along with Polarization Optics and UV Laser Accessories for Characterization of Armor Ceramics and Biological Tissues" G. Subhash (PI), ***DURIP,* Army Research Office**, **$184,184**, (04/11/2016-04/10/2017)
7. *"Spatial Distribution of Amorphization Intensity in B_4C during Rate-Dependent Indentation and Ballistic Impact Processes"* G. Subhash (PI), **Army Research Office**, $**361,594**, 06/10/14-10/30/17.
8. "Development of Accident-Tolerant Control Rods & Guide Tubes for PWR Fuel Assemblies" James Tulenko (PI) and G. Subhash, **NovaTech, $100,000**, 09/01/2018-08/30/2019
9. *"In*vestigation of Dynamic Impact Test of SiC Monolithic and SiC-SiC Composite Tubes" **General Atomics,** G. Subhash (PI), **$30,000** (Nov 01, 2016- Apr 30, 2017).
10. *"Educational Video on why Castillo de San Marcos Endured the Cannon Ball Impacts during the Wars between the British and the Spanish"* G. Subhash (PI), **Committee on Education, Interpretation and Facilities, UF Historic St. Augustine,** St. Augustine, FL**, $10,000,** (05/2015 -12/2015).
11. *"Development of Amorphization Resistant Boron Carbide"* G. Subhash (PI), **Department of the Army, $305,000,** 06/25/14-06/24/15.
12. *"GOALI/Collaborative Research: Reliable Prediction of Endurance Life of Ultra-High-Strength Aerospace Rolling-Element Bearings"* A. Nagaraj (PI**),** G. Subhash, and W.P. Ogden **National Science Foundation, $245,142,** 08/01/14 – 07/31/17**.**
13. **"***Development of Innovative High-Thermal Conductivity Accident Tolerant Fuels (phase 1b)"* James

Tulenko (PI) and Ghatu Subhash, **AREVA Federal Services and DOE, $450,000**, 10/01/14-09/30/16

14. *"Development of Innovative High-Thermal Conductivity Accident Tolerant Fuels (phase 1a)"* James Tulenko (PI) and Ghatu Subhash, **AREVA Federal Services and DOE, ~$300,172**, 01/01/13-09/31/14
15. *"High Strain Rate Testing of Armor Plates and Helmet Pads"* **G. Subhash (PI), US Department of the Army, $888,190,** 12/08/09-12/31/14.
16. *"Development of Innovative Accident Tolerant High Thermal Conductivity UO2 Fuel Pellets with a Diamond Dopant*" J. Tulenko (PI), G. Subhash and R. Baney, **Department of Energy- 2012 Nuclear Energy University Program (NEUP), $800,000,** *08/15/12-07/31/15.*
17. *"Cavitation Induced Structural and Neural Damage in Live Brain Tissue Slices: Relevance to TBI"* **G. Subhash (PI),** Malisa Sarntinoranont, Mike King, **Army Research Office, $391,797,** *08/01/10-07/31/14*
18. *"Development of Innovative High Thermal Conductivity UO_2 Ceramic Composites Fuel Pellets with Carbon Nano-Tubes Using Spark Plasma Sintering"* **G. Subhash (PI),** J. Tulenko and R. Baney, **Department of Energy- 2010 Nuclear Energy University Program (NEUP), $794,042,** *08/01/10-01/31/14*
19. "Characterization of RCF-Affected Materials in Single Ball Tests" **SKF Aerospace NA**, **$50,000**, A. Nagaraj (PI) and G. Subhash, 8/31/13 -12/31/14
20. *"Refractory Nanoelectroceramic Composites for Enhanced Radioisotope Thermoelectric Power Generation in Long-duration Space Flight"* Richard Blake (PI from UCF) *and* **G. Subhash, Space Research Initiative (SRI) of Florida Space Institute (FSI), $38,154,** *07/01/2012 – 06/30/2013 (In the process of being awarded)*.
21. *"Mechanistic Quantification of Bearing Material Degradation"* A.Nagaraj (PI) and G. Subhash, **Pratt and Whitney, Hartford, CT, $75,000,** 04/18/2011 to 08/31/2012
22. "*Goali: Monotonic and cyclic response of plastically graded surface and their Application to Rolling Contact Fatigue*" A. Nagaraj (PI**)** and G. Subhash, **National Science Foundation, $322,000,** 09/15/09 – 08/31/13**.**
23. "Preliminary Design of a Laboratory Helmet Model for Resistance Against Rotational Acceleration," **UF Jacksonville Healthcare, $5000, 7/1/11-12/31/11**
24. *"Characterization and Failure Theories for Three-Dimensional Textile Composites under High Strain Rate Loading",* B. Sankar (PI) and G. Subhash, **Army Research Office (ARO) / Army Research Laboratories (ARL), $487,842,** 05/01/08-11/31/11.
25. *"Static and Dynamic Response of Glass"* ***G. Subhash (PI*****), Saxon Glass Inc***., NY., $8000, 02/01/10 – 06/30/2010.*
26. *"Shear Thickening Behavior of Commercial Non-Newtonian Fluids"* ***G. Subhash (PI*****), UF Jacksonville Healthcare**, ***$8894****, 01/10/10 – 05/15/10*
27. *"DURIP-09: "High-Speed Digital Camera for in situ Characterization of Deformation and Fracture Behavior of Advanced Armor Materials",* **G. Subhash (PI), ARO, $132,280**, 05/01/09 – 04/30/10.
28. *"DURIP-08: Acquisition of Plasma Pressure Compaction Unit for Rapid Consolidation **of** Ultra High Temperature Ceramics and Nanostructured Materials",* **G. Subhash (PI), Air Force Office of Scientific Research (AFOSR), $355,000**, 05/01/08 – 05/30/09.
29. *"Development of Polymer Split Hopkinson Pressure Bar Facility for in vivo MRI studies"* **G. Subhash (PI) US Department of the Army/ MIT**, **80,774,** 8/1/2008-7/31/2009.
30. *"Determination of static and dynamic indentation hardness and fracture toughness of case hardened and through hardened steels*" **G. Subhash** and A. Nagaraj, **AFRL, Dayton, OH, $26,751**, 10/01/07-05/31/08.
31. "*Development and Characterization of Multi-Functional Polymeric Foams"* **G. Subhash (PI),** Gerry Caneba and David Shonnard, **Raytheon/DARPA, $1,667,000,** 03/16/06-06/15/07.
32. *"GOALI - Ultrafine Grained and Nanostructured Ceramics: Influence of Processing, Grain Size and Strain Rate on Fracture Characteristics",* **G. Subhash (PI)** and X-L Gao, **National Science Foundation, *$410,443***, (NSF $311,028 + Michigan Tech $67000 + Materials Modifications Inc $65,000), 15 Aug 2003- 15 Aug 2007.

33. *"Plasticity Limits for Structural Ceramics under Instrumented Single-Grit Scratch Testing"*, **G. Subhash (PI),** ***$75,000***, **Oak Ridge National Laboratories**, Oak Ridge, TN, (May 01, 2004-Mar 15, 2007)
34. *"High Strain Rate Characterization of Bulk Amorphous Metals"* **G. Subhash (PI),** ***$294,820***, **Army Research Office** 9/1/01 - 5/31/05.
35. *"Hydroforming of Aluminum Extrusions"* **G. Subhash (PI),** ***$194,733***, **Hydro Aluminum of North America**, **Holland, MI** 09/18/01 - 09/17/04.
36. "Scratch Hardness Tester" ***G. Subhash (PI), $16,000***,**Oak Ridge National Laboratories**, Oak Ridge, TN, 9/1/03 – 7/30/04
37. *"Sabbatical Research at Sandia National Laboratories"* **G. Subhash (PI),** ***$62000***, **Sandia National Laboratories**, *Albuquerque, NM, Oct 1, 2003-May 30, 2004.*
38. "Internship at Norsk-Hydro, Trondheim, Norway for Adam Loukus" **G. Subhash (PI),** ***$16000***, **Hydro Aluminum of North America**, **Holland, MI**, Sept 2003, Jan 2004.
39. *"Dynamic Indentation Hardness Tester"* **G. Subhash (PI),** ***$36,526***, **Oak Ridge National Laboratories**, 01 May 2003 - 01 Sept 2003
40. *"Wear Characterization of Candidate Structural Ceramics for Gun Barrel Liners Using Single-Grit Scratching"* **G. Subhash (PI),** ***$19,661***, **Army Research Laboratories**, 15 May - 15 Apr 15, 2003.
41. *"High Strain Rate Testing of Structural Foams*" **G.Subhash (PI)** and X.-L. Gao, $***68,149***, **L&L Products**, Romeo, MI, May 1,2002- Aug 15, 2003.
42. *"Dynamic Indentation Hardness Tester"* **G. Subhash (PI),** ***$40, 413***, **Army Research Laboratories** 11/1/01 - 3/25/02.
43. "*Material Characterization of Glass-Fiber Reinforced Thermoplastic Composites at High Strain Rates",* **Daimler Chrysler Corporation**, **J.B. Ligon (PI),** G. Subhash and I. Miskioglu, ***$87,202***, Sept 1, 2000-Dec 30, 2001.
44. *"Hopkinson Bar Compression Testing of Bulk Amorphous Alloys"* ***G. Subhash (PI),*** **Army Research Laboratories**, ***$11,000***, June 1, 2000 - Aug 01, 2000.
45. *"Analysis of Bituminous Pavement Surface Characteristics and Their Effects on Friction Properties"* **G. Dewey (PI**) and G. Subhash, **Michigan Department of Transportation**, ***$250,705***, Mar 01, 2000- Sept 30, 2001.
46. *"Acquisition of a Nano Indentation Test System for Interdisciplinary Research at MTU"*, I. **Miskioglu (PI),** G. Subhash, W. Williams, **National Science Foundation**, Sept 1999-Aug 30, 2001, ***$200,000***.
47. *"High Strain Rate Characterization of Nanostructured Materials"* ***G. Subhash (PI*****), Materials Modifications Inc.** Aug 25-Nov 30, 1999, ***$10,000***.
48. *"Investigation of the Influence of Material and Process Parameters on Hydroforming of Extruded Aluminum Tubes"*, **A. Majalessi (PI)** and G. Subhash, **Norks-Hydro, Norway**, March 01, 1999- Feb 28, 2001. ***$198,733***.
49. *"Internship with Norsk-Hydro in Norway"* ***G. Subhash (PI*****)**, A. Majlessi, J. Pilling, **Norks-Hydro, Norway**, July 17th -Aug 28th, 1999, ***$9,450***.
50. *"Exploration of Novel Avenues for Machining of Brittle Materials,"* July 1997- June 2000, **A. Chandra (PI)** and G. Subhash, **National Science Foundation, *$308,000***.
51. *"Evaluation of the Dynamic Fracture Characteristics of Aggregates in PCC Pavements,*" Oct 15, 1997-June 15, 2000, S. J. Vitton (PI), G. Subhash and George R. Dewey, ***$554,425,*** **Michigan Department of Transportation**.
52. "*Exploration of a Novel Technique for Determining the Residual Strength of Damaged Composites*" June 1, 1999-Nov 30, 1999, **G. Subhash (PI), Army Research Office, *$19,957***.
53. *"High Strain Rate Material Response and its Relevance to Material Behavior During Crash"* Technical presentations at Milford, **General Motors**, July 13-14,1998, **G. Subhash (PI),** $***16,000***.
54. *"Development of W-Hf-Ti Composite by Mechanical Alloying and Solid State Sintering to Enhance the Propensity for Shear Banding in W Alloys"* 01/01/95-02/28/98, **U.S. Army Research Laboratories**, **G. Subhash (PI)** and B.J. Pletka (Co-PI:). ***$49,792***.

55. *"Further Developments in High Strength Alumina for Machine Tool Applications,"* 12/01/ 95-11/30/96. **G. Subhash (PI),** B.J. Pletka and W.W. Predebon (Co-PIs), **State of Michigan- Research Excellence Funds**, ***$34,250***.
56. *"Determination of Dynamic Indentation Hardness and its Relevance to Impact Damage from Low Mass/High Velocity Debris on Structures"* **NASA/Michigan Space Grant Consortium** Fellowship, G. Subhash (PI) and B.J. Koeppel, 1997, ***$5000***.
57. *"High Strain Rate Material Response and its Relevance to Material Behavior During Crash"* Technical presentations at **General Motors** in U.S and Mexico, Dec 1-5, 1997, G. Subhash (PI), ***$32,000***.
58. *"Dynamic Characterization of Nano-Tungsten"* 1997, **Materials Modifications Inc**. Fairfax, VA, G.Subhash (PI), ***$10,000***.
59. *"Miniaturized Dynamic Indentation Hardness Tester*" 1997, **Kulicke & Soffa Industries Inc**., Willow Grove, PA, G. Subhash (PI***), $5,000***. Faculty Development Grant at **MTU** to attend 11th Winter School on Continuous Media Mechanics, Urals Branch of Russian Academy of Sciences, Perm, Russia, February 1997, $2100.
60. *"Determination of Dynamic Indentation Hardness and its Application to High Strain Rate Deformation Processes,"* 06/01/96-05/31/97. **NASA/Michigan Space Grant Consortium Seed Grant, MI**. G. Subhash (PI), $***8,000***.
61. *"Development of Non-Brittle Ceramic for High-Temperature and High Strength Applications,"* Oct1996-Sept 1997, **Idaho National Engineering Laboratories, Lockheed-Martin Corp**. ***$99,600***. T.M. Lillo (PI), H.S. Chu, W.W. Predebon, G. Subhash and B.J. Pletka, (MTU share $34,720).
62. *"Temperature Measurements During Dynamic Deformation of Materials Using High Speed Infrared Detectors,"* 1993, Century II Campaign Endowed Equipment (C^2E^2) fund, Dean of Graduate School, **Michigan Technological Universit**y, ***$5,000***.
63. *"Characterization of Deformation Modes in CVD and PM Rhenium,"* 1994. **Ultramet,** Pacoima, CA, G. Subhash (PI), ***$3,000***.

Funded Senior Design Projects Advised at Michigan Tech

1. *"Design of Flexible Composite Drive Shaft"* **Visteon**, $15,000, Fall 2000 and Spring 2001.
2. *"Design of Door Seal Mechanism"*, **3M**, $15,000, Fall 2000 and Spring 2001.
3. "*Design and Fabrication of Dyno Test Cell*" **Visteon**, $15000, September 2001- May 2002,
4 "*Design of a Sensor for Road Surface Temperature Measurement*" $15000, **Michigan Department of Transportation**, $15000, September 2001- May 2002
5. "*Adhesive-Plastic Interface for the B-Pillar*", **Dow Automotive Inc.**, $15000, September 2001- May 2002
6. *"Design and Development of Data Acquisition System for Remote Sensing of Road Temperature*" 15000, **Michigan Department of Transportation,** September 2001- May 2002
7. *"Design of RTV Test Fixture*" **Loctite Inc**., $15000, September 2001- May 2002