

# UPADRASTA RAMAMURTY

<p>Professor &amp; JC Bose National Fellow Department of Materials Engineering <b>Indian Institute of Science</b> Bangalore-560 012, INDIA</p> <p>Phone: (91) 80-2293 3241 Fax: (91) 80-2360 0472 <i>e-mail:</i> <a href="mailto:ramu@materials.iisc.ernet.in">ramu@materials.iisc.ernet.in</a> (or) <a href="mailto:satwiku@gmail.com">satwiku@gmail.com</a> web: <a href="http://materials.iisc.ernet.in/~ramu/">http://materials.iisc.ernet.in/~ramu/</a></p>	<p>Editor <b>Acta Materialia &amp; Scripta Materialia</b> <i>e-mail:</i> <a href="mailto:acta@materials.iisc.ernet.in">acta@materials.iisc.ernet.in</a> (or) <a href="mailto:scripta@materials.iisc.ernet.in">scripta@materials.iisc.ernet.in</a></p>
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## RESEARCH AREAS

Mechanical behavior of advanced materials, with current focus on bulk metallic glasses, Ti, Mg, and shape memory alloys, and organic crystals. Additive manufacturing. Nanoindentation technique.

## ACADEMIC CAREER

**Professor**, Department of Materials Engineering, Indian Institute of Science, Bangalore, India, January 2010 onwards.

**Associate Professor**, Department of Materials Engineering, Indian Institute of Science, Bangalore, India, October 2006 – December 2009.

**Assistant Professor**, Department of Materials Engineering, Indian Institute of Science, Bangalore, India, October 2000 – September 2006.

**Assistant Professor**, Manufacturing Engineering Division, School of Mechanical & Production Engineering, Nanyang Technological University, October 1997-September 2000.

**Post-Doctoral Research Associate**, Department of Materials Science & Engineering, Massachusetts Institute of Technology. October 1996- September 1997. (Supervisor: Professor Subra Suresh)

**Post-Graduate Researcher**, Materials Department, University of California-- Santa Barbara. August 1994-September 1996. (Supervisors: Professors Frank Zok and Fred Leckie)

## OTHER APPOINTMENTS

**Qiushi Distinguished Visiting Professor**, Zhejiang University, Hangzhou, China, May 2015 onwards.

**Professeur invité (Exceptional Class)**, *Université de Lorraine*, France, June-July 2014 (one month).

**Distinguished Visiting Professor**, King Abdulazeez University, Jeddah, Saudi Arabia, March 2013 onwards.

**Honorary Professor**, International Centre for Materials Science, Jawaharlal Nehru Centre for Advanced Scientific Research, Jakkur, India, August 2009 onwards.

**Visiting Scientist**, Department of Materials Science & Engineering, Massachusetts Institute of Technology, March – August 2012.

**Visiting Professor**, African University of Science and Technology (AUST), Abuja, Nigeria, January 2009 (three weeks) and January-February, 2010 (three weeks).

**Guest Scientist**, Laboratory for Mechanics of Materials and Nanostructures, Swiss Federal Laboratories for Materials Testing and Research (EMPA), Thun, Switzerland from June-July 2008 (three weeks) and April-June 2009 (three months).

**Guest Scientist**, Institute for Materials, Ruhr University Bochum, Germany, June 2007 (two weeks).

**Professeur invité**, *Université de Rennes*, France, December 2006 (Two weeks) and May 2009 (one week).

**Guest Scientist**, Department of Materials Science, Hahn-Meitner-Institute, Berlin, Germany, May-June 2006 (Two months).

**Visiting Scientist**, Structural Materials Division, Corporate Strategic Research, ExxonMobil Research and Engineering Company, Annandale, USA, May-July 2005 (three months).  
**Visiting Scientist**, Composites and Coatings Group, The Gordon Laboratory, Department of Materials Science and Metallurgy, University of Cambridge, May – July 2004 (eight weeks).  
**Visiting Scientist**, Suresh Group, Department of Materials Science & Engineering, Massachusetts Institute of Technology, May – July 2003 (three months).  
**Faculty Fellow**, Advanced Materials Program, Singapore-MIT Alliance (SMA), October 1999-September 2000.

## EDUCATION

**Doctor of Philosophy** in Materials Science and Engineering  
Division of Engineering, Brown University, September 1991-July 1994.  
Minors: Solid Mechanics and Applied Mathematics  
Dissertation: "High-Temperature Subcritical Crack Growth in Si-Based Structural Ceramics"  
Advisor: Professor Subra Suresh (now President, Carnegie Mellon University, USA)  
**Master of Engineering (First Class with Distinction, First Rank)** in Metallurgy  
Department of Metallurgy, Indian Institute of Science, August 1989-January 1991.  
Project: "Effect of Heat Treatment and Li depletion on Mechanical Properties of Al-Li alloys" (**Best project award**). Advisor: Professor E. S. Dwarakadasa  
**Bachelor of Engineering (First Class with Distinction, First Rank)** in Metallurgy  
College of Engineering, Andhra University, August 1985-May 1989.

## AWARDS

**TWAS Prize (Engineering Sciences)**, The World Academy of Sciences, 2015.  
**CNR Rao Prize Lecture in Advanced Materials**, Materials Research Society of India, 2014.  
**J.C. Bose National Fellowship**, Government of India, 2013 – 2018.  
**Shanti Swarup Bhatnagar Prize (Engineering Sciences)** 2011.  
**Metallurgist of the Year (Metal Sciences category)** 2008, by Indian Institute of Metals and Ministry of Steels, Government of India.  
**Swarnajayanthi Fellowship (Engineering Sciences)**, Department of Science and Technology, Government of India 2008-2013.  
**Scopus Young Scientist (Materials Science category)** 2007.  
**University Fellowship**, Brown University, September 1991-May 1992.  
**K. P. Abraham Medal** (Best M.E. Project). I.I.Sc. 1991.  
**A. A. Krishnan Medal** (Highest GPA in the M. E. Class of '91) I.I.Sc. 1991.

## FELLOWSHIPS

**Fellow of the Indian National Science Academy** (Date of election: January 2012).  
**Fellow of the Indian Academy of Sciences** (Date of election: January 2010).  
**Fellow of the Indian National Academy of Engineering** (Date of election: January 2010).

## HONORS

**Co-chair, Fifth Indo-American Frontiers of Engineering** (IAFOE) Symposium, held in Mysore, India during May 2014.  
**Plenary Speaker**, Ninth International Conference on Bulk Metallic Glasses (BMGIX), held in Xiamen, China, December 2012.  
**Co-chair, Fourth Indo-American Frontiers of Engineering** (IAFOE) Symposium, Washington DC, USA, March 2012. This is a biennial flagship program of the Indo-US S&T Forum (IUSSTF) organized in partnership with the National Academy of Engineering, USA.

**Plenary Speaker**, Fifteenth International Conference on the Strength of Materials (ICSMA15), held in Dresden, Germany, 2009.

**Plenary Speaker**, ICREA International Workshop on Structural and Mechanical Properties of Metallic Glasses, held in Barcelona, Spain, 2009.

**Overseas Expert and plenary speaker**, Fourth Kumamoto University (Japan) - Korea Institute of Industrial Technology (Korea) Symposium on BMGs and Advanced Materials, Kumamoto, Japan, May19-21, 2008.

**Honorary Professor**, International Centre for Materials Science, Jawharlal Nehru Centre for Advanced Scientific Research, Jakkur, India.

**Listed in Essential Science Indicators (ESI)**, which tracks top 1% of scientists, in the Materials Science category since July 2007.

## MEMBERSHIP OF COMMITTEES

**Sectional Committee for Engineering**, Indian Academy of Sciences (IASc), 2016 onwards.

**Sectional Committee - VI** (Materials Science & Engineering) of the Indian National Science Academy (INSA), 2016-18.

**Sectional Committee - VIII** (Mining, Metallurgical and Materials Engineering) of the Indian National Academy of Engineering (INAE), 2014-17.

**Academic Advisory Council**, Jawharlal Nehru Centre for Advanced Scientific Research, Jakkur, India, 2012 onwards.

**International Review Panel**, Swiss Programme for Research on Global Issues for Development (r4d), Switzerland, 2013 onwards

**International Review Panel**, Deutsche Forschungsgemeinschaft (DFG), Germany's Priority Programme 1594 on "Topological Engineering of Ultrastrong Glasses." 2012 onwards.

**Scientific Committee**, Materials Science Division, National Aerospace Laboratories, Bangalore. 2011 onwards.

**International Organizing Committee**, International Indentation Workshop series.

**Scientific Advisory Board**, International Conference on Porous Metals and Metallic Foams.

**Scientific Committee**, International Workshop on Flow and Fracture of Advanced Glasses.

## EDITORIAL/REVIEW SERVICE

Editor, *Acta Materialia & Scripta Materialia*, August 2014 onwards.

Editorial Board Member, *Intermetallics*, 2014 onwards.

Editorial Board Member, *Materials Science & Engineering A*, 2013 onwards.

Member, International Advisory Panel, *Materials Research Express*, 2013 onwards.

Editorial Board Member, *Emerging Materials Research*, January 2012 onwards.

Editorial Board Member, *Indian Journal of Engineering & Materials Sciences*. 2011-2013.

Key Reader, *Metallurgical and Materials Transactions A*, 2012 onwards.

Associate Editor, *Transactions of the Indian Institute of Metals*, August 2003 –July 2006.

## GUIDENCE/MENTORING

### Post-doctoral fellows/visiting scientists

1. Dr. Vincent Keryvin, (then) Assistant Professor, Laboratoire de recherche en mécanique appliquée de, Université de Rennes, France. Period of visit: January-March 2008.
2. Dr. Kenneth K. Alaneme, Lecturer, Department of Metallurgical and Materials Engineering, Federal University of Technology, Nigeria. Period of visit: April-September 2009.
3. Dr. S.R.N.Kiran Mangalampalli, Dr.D.S.Kothari Post-doctoral Research Fellow, July 2009-July 2012.
4. Dr. Indrani Sen, March-September 2010.

5. Dr. Appala Naidu Gandhi, March –September 2013.

Students (including those that are in progress)

Ph.D.	<ol style="list-style-type: none"> <li>1. P. Murali, “Multi-scale approaches for understanding deformation and fracture mechanisms in amorphous alloys,” 2007. (with V.B. Shenoy, Physics Department)</li> <li>2. Aditi Datta, “First principles study of structure and stacking fault energies in some metallic systems,” 2007. (with U.V. Waghmare, JNCASR)</li> <li>3. R. Raghavan, “Effect of free-volume on the fracture and fatigue of amorphous alloys,” 2008.</li> <li>4. K. Gopinath, “High temperature fatigue crack growth in a low interstitial high strength nickel based superalloy,” 2009. (with S. Kamath and A.K. Gogia, DMRL Hyderabad)</li> <li>5. Parag U. Thadaiya, “Finite element and experimental studies on fracture behavior in bulk metallic glasses,” 2009. (with R. Narasimhan, Mechanical Engineering Dept.)</li> <li>6. Indrani Sen, “Mechanical behavior of B-modified Ti-6Al-4V alloys,” 2010.</li> <li>7. K. Eswar Prasad, “Plastic deformation during indentation of metals and metallic glasses,” 2011.</li> <li>8. V.D. Divya, “Diffusion and indentation studies on systems related to Ni based superalloys,” 2011. (with A. Paul, Materials Engineering Dept.)</li> <li>9. Vyasa V. Shastry, “Some processing and mechanical behavior related issues in Ti-Ni based shape memory alloys,” 2013.</li> <li>10. Govind, “Mechanical properties of some advanced Mg alloys,” 2013. (with D. Sivakumar, VSSC Trivandrum)</li> <li>11. Gaurav Singh, “Some mechanical properties of Ti-6Al-4V-B Alloys,” 2014.</li> <li>12. R. L. Narayan, “Fracture and deformation in metallic glasses and their composites,” 2014.</li> <li>13. Soumya S. Bhat, “DFT calculations of stacking fault energies in nano-metals.” (with U. V. Waghmare, JNCASR) 2015.</li> <li>14. Manish K. Mishra, “Probing mechanical properties of molecular crystals with nanoindentation: applications to crystal engineering,” (with G. R. Desiraju, Solid State &amp; Structural Chemistry Unit), 2016.</li> <li>15. Devaraj Raut, “Mechanical behavior of BMG matrix composites,” August 2011 onwards.</li> <li>16. Jyoti Suryawanshi, August 2012 onwards.</li> <li>17. J. Anuja, August 2013 onwards</li> <li>18. Abhishek Chaturvedi, August 2013 onwards.</li> <li>19. A. V. H. Pavan, August 2013 onwards. (with Dr. Kulvir Singh, BHEL R&amp;D, Hyderabad)</li> <li>20. Somasekhar Reddy, August 2014 onwards.</li> <li>21. Puneet Kumar, August 2015 onwards.</li> </ol>
M.Sc. (Eng.)	<ol style="list-style-type: none"> <li>1. S. Jana, “Subsurface deformation during indentation of bulk metallic glasses,” 2002.</li> <li>2. R. Raghavan, “Structural relaxation and crystallization in Pd<sub>40</sub> Cu<sub>30</sub>Ni<sub>10</sub>P<sub>20</sub> bulk metallic glass,” 2003.</li> <li>3. N. Suresh, “Aging response and its effect on mechanical behavior of Cu-Al-Ni single crystal SMAs,” 2004.</li> <li>4. R. Bhowmick, “Zr-based bulk metallic glass, a study of processing, welding and subsurface deformation mechanisms,” 2004.</li> <li>5. S. Kamble, “Indentation strength of piezoelectric ceramics,” 2005.</li> <li>6. M. Abdul Azeem, “Mechanical behavior of ultralight materials,” 2006.</li> </ol>
M.E.	<ol style="list-style-type: none"> <li>1. N. Ravi Kumar, “Mechanical behavior of Mg-SiC composite,” 2002.</li> <li>2. P. Sudheer Kumar, “Impact resistance of an Al Foam,” 2002.</li> </ol>

3. S. Galgalikar, "Effect of Ag on the mechanical properties of AZ91 alloy," 2002.
4. Niraj Nayan, "Mechanical fatigue in Ni-Ti shape memory alloys," 2003.
5. M. C. Kumaran, "Energy absorption characteristics of aluminum foam during conical indentation," 2003.
6. G. Srikant, "Strain distribution underneath a Vickers Indenter," 2004.
7. S. K. Giri, "Fatigue in a Ni-Ti-Fe shape memory alloy," 2004.
8. L. Maheshwari, "Micromechanisms of deformation and fracture in Ti-B Alloys," 2005.
9. Debducta Roy, "Fatigue in Ni-Ti SMA wires," 2006.
10. Murthy Kolluri, "Strain hardening and fatigue in metal foams: the effect if constraint," 2006.
11. Kaushik Das, "Evaluation of mechanical properties of  $\text{Li}_2\text{B}_4\text{O}_7\text{-BaO-Bi}_2\text{O}_3\text{-Nb}_2\text{O}_5$  glass-ceramics by instrumented indentation," 2007.
12. T. Ram Prabhu, "Mechanical characterization of P/M low alloy steel and development of low density cenosphere filled iron foams (cellular steel)," 2008.
13. K. Boopathy, "Fatigue crack growth behavior in BMG matrix composites and effect of ion implantation on mechanical behavior of as cast BMGs," 2009.
14. E. Amankwah, "Effect of Cu on the mechanical properties of SUS304H austenitic stainless steel under annealed conditions," 2010. (Student from AUST)
15. K. Obodo, "Variation of constraint factor with respect to temperature using indentation techniques." 2010. (Student from AUST)
16. Ashwin Jayaraman, "Orientation dependence of mechanical properties in ferromagnetic shape memory alloy NiMnGa" 2010.
17. Abir Bhattacharyya, "Constraint factor in metals: effect of temperature," 2011.
18. Prince Shaival Singh, "Mechanical properties of BMG matrix composites," 2011.
19. Zita Maria Zachariah, "Tension-compression asymmetry in dilute Mg alloys – rate and temperature effects," 2012.
20. R.K. Prusty, "Nanoindentation of Ni gyroids," 2013.
21. Sourabh Kadambi, "Indentation studies on titled Cu samples and shape memory alloys," 2014.
22. Shanka Nag, "Statistical aspects of the onset of plasticity in metallic glasses," 2015.
23. Rathode, 2016 onwards.

#### SPONSORED PROJECTS (Principal Investigator)

Title	Funding Agency	Value (Rs.)	Duration
Mechanical property characterization of metallic foams	Aeronautical Research & Development Board	15,92,400	02/2003- 09/2006
Processing and characterization of bulk metallic glasses for structural applications	Defence Research & Development Org.	89,66,000	03/2003-02/2008
Experimental investigation into the micromechanisms of damage in a boron modified Ti-6Al-4V alloy	Asian Office of the Air Force Research & Development	8,96,621 (\$20,700)	03/2004-03/2005
Fatigue and fracture Behavior of affordable Ti-B alloys	--ditto----	5,02,871 (\$11,500)	04/2005-03/2006
Fatigue in shape memory alloy wires	General Motors Corp.	18,10,403	04/2005-03/2007
Characterization of Ni-Ti shape memory	VSSC, Trivandrum	4,99,500	02/2006-08/2007

alloys			
Boron-modified Ti alloys	Boeing Corp.	1,53,25,200 (\$3,40,560)	07/2006-06/2010
Mechanical properties at the nano-scale	Department of Science & Technology, GoI	1,41,30,000	09/2007-08/2010
Smart Materials: Development of high temperature shape memory alloys for environmentally-friendly aero-engines	UK-India Education & Research Initiative and Rolls Royce Plc.	89,26,513	05/2008 – 04/2011
Fracture and fatigue in amorphous alloys (Swarnajayanthi fellowship)	Department of Science & Technology, GoI	1,15,45,800	07/2008 – 06/2013
Effect of triaxial state of stress on deformation processing maps	General Motors, USA	68,20,000	01/2011- 12/2012
Nano-mechanics of advanced materials	Nanomission, DST, GoI.	1,70,15,520	11/2011 – 10/2014
Investigation of Healing on Fatigue Response in Shape Memory Alloys	General Motors R&D Labs, Bangalore	11,31,678	10/2011 –09/2012
Design, Development and Mechanical Property Characterization of Ti alloys	Boeing, USA	97,29,000	02/2012 – 01/2015

#### **LIST OF CONFERENCE PRESENTATIONS (since 2000)**

1. International Symposium on Materials Ageing and Life Management (ISOMALM-2000), IGCAR, Kalpakkam, October 2000. *Invited.*
2. Annual Meeting of the Metallurgical Society, Department of Metallurgy, IISc, Bangalore, November 2000. *Invited.*
3. Workshop on Technology and Industrial Applications of Materials, Madurai, March 2001. *Invited.*
4. National Conference on Light Structural Materials, Trivandrum, February 2002. *Invited.*
5. Symposium on Nano and Microstructural Design of Advanced Materials, TMS-ASM Fall, Columbus, OH, USA, October 2002.
6. Annual Meeting of the Metallurgical Society, Department of Metallurgy, IISc, Bangalore, November 2002. *Invited.*
7. Discussion Meeting on Plasticity and Deformation Behavior of Alloys and Intermetallics, BARC, Mumbai, January 2003. *Invited.*
8. Eighth International Symposium on Plasticity and Impact Mechanics (IMPLAST'03), New Delhi, March 2003.
9. One-day Meeting on Metallurgy for Non-metallurgists, organized by Indian Institute of Metals- Mysore Chapter, August 2003. *Invited.*
10. Third International Conference on Bulk Metallic Glasses (BMG-III), Beijing, China, October 2003.
11. Theme Meeting of Users on Beryllium Technology, ISRO Headquarters, Bangalore, November 2003. *Invited.*

12. Theme meeting on Zirconium and Titanium Alloys, BARC, Mumbai, December 2003. *Invited.*
13. Meeting on Fracture Behavior of Advanced Materials: Present Status and Future Projections, DMRL, Hyderabad, December 2003. *Invited.*
14. Workshop on Mechanical Behavior of Systems at Small Length Scales, IISc, January 2004. *Invited.*
15. Continuing Education Programme on Surface Science and Engineering, DMRL, Hyderabad, February 2004. *Invited.*
16. Materials Research Society of India-Annual General Body Meeting, BHU, Varanasi, February 2004. *Invited.*
17. Symposium on Nanoindentation of Engineering and Biological Materials in the Eleventh International Conference on Fracture, Turin, Italy, March 2005. *Invited.*
18. Symposium Z: Amorphous and Nanocrystalline Metals for Structural Applications, MRS-Fall Meeting, Boston, USA, November 28-December 01, 2005.
19. Indo-US Workshop on Recent Advances in Microstructure, Texture and Property relations, Visakhapatnam, December 2005. *Invited.*
20. Second Biennial Workshop on Deformation and Fracture Behavior of Advanced Materials (DFBAM-II), DMRL, Hyderabad, February 24, 2006. *Invited.*
21. Mechanics and Properties of Nanocrystalline Materials, I: Amorphous Metals, Beijing, China, April 23-28, 2006. *Invited.*
22. Workshop on MEMS and Nanotechnology, Nanyang Technological University, Singapore, May 14-18, 2006. *Invited.*
23. Materials Behavior far from Equilibrium, Bhabha Atomic Research Centre, Mumbai, December 15-16, 2006. *Invited.*
24. National Workshop on Advances in Sensors and Applications, College of Engineering, GITAM, Visakhapatnam, 22-23 December, 2006. *Invited.*
25. International Workshop on Bulk Metallic Glasses: Science & Technology, Bangalore, January 2007. *Invited.*
26. Workshop on Mechanical Behavior of Systems at Small Length Scales-2, Bangalore, February 2007. *Invited.*
27. Third International Indentation Workshop, Cavendish Laboratory, University of Cambridge, Cambridge, UK, 15 – 20 July, 2007.
28. International Workshop on Nanometrology (IWON-07), National Physical Laboratories, New Delhi, October 17-19, 2007. *Invited.*
29. 16<sup>th</sup> International Forum for Materials Testing, Ulm, Germany, October 22-25, 2007. *Invited.*
30. International conference on ferromagnetic shape memory alloys, S.N.Bose National Centre for Basic Sciences, Kolkata, November 2007. *Invited.*
31. Special session on “Smart Materials,” as a part of Annual Technical Meeting of the Indian Institute of Metals, Mumbai, November 2007. *Invited.*
32. Symposium (Z) on Bulk Metallic Glasses, MRS-Fall meeting, Boston, USA, November 2007. *Invited. Session chair.*
33. Smart Materials for Frontier Technologies, 21<sup>st</sup> National Convention of Metallurgical and Materials Engineers, organized by the Institution of Engineers, Karnataka Chapter, Bangalore, 10-11 January 2008. *Invited.*
34. International Symposium on Indentation Behavior of Materials, ARCI, Hyderabad, 3-7 February 2008. *Invited.*

35. Second Roundtable on Indo-US Perspectives in Science & Technology, NIAS, Bangalore, 16-17 February 2008. *Invited.*
36. Symposium on Modeling the Metallurgical Phenomenon, *GE Global Research Center, Bangalore, 22-23 April 2008. Invited.*
37. Sixth International Conference on Bulk Metallic Glasses (BMG VI) in Xian, China, 12-15 May, 2008. *Invited. Session chair.*
38. Fourth Kumamoto University (Japan) - Korea Institute of Industrial Technology (Korea) Symposium on Bulk Metallic Glasses and Advanced Materials, Kumamoto, Japan, May 19-21, 2008. Invited as *Overseas Expert. Plenary lecture and Session chair.*
39. First CSM Users meeting held in NeuChatel, Switzerland.
40. Fifth International Conference on Smart Materials, Structures and Systems, Bangalore, July 24-26, 2008. *Invited, Session Chair.*
41. Symposium on Mechanical Properties of electronic materials and thin films during IUMRS-ICEM 2008, Sydney, Australia, July 28-August 02, 2008. *Invited, Session chair.*
42. Symposium on 'Engineering Science across Disciplinary Boundaries,' in the Society of Engineering Science (SES) Annual Meeting, University of Illinois at Urbana-Champaign, USA, October 12-15, 2008. *Invited.*
43. Third *National Frontiers of Engineering Symposium (NatFOE3)* at IIT Madras, 24-25 October 2008, organized by the Indian National Academy of Engineering and IIT Madras. *Invited*
44. International Symposium on Amorphous Alloys in HangZhou, P.R. China, November 19-23, 2008. *Keynote and Session chair.*
45. IUTAM Symposium on Multi-Functional Material Structures and Systems, Bangalore, 10 – 13 December, 2008. *Invited.*
46. International Conference on Active/ Smart Materials, January 7-9, 2009 in Madurai. *Invited.*
47. ICREA International Workshop on Structural and Mechanical Properties of Metallic Glasses, June 17-19, 2009, Barcelona, Spain. *Plenary Speaker. Session chair.*
48. Symposium on "Mechanical Behavior of Nano- and Micro-Scale Systems," (second in the series) of the International Conference on Materials for Advanced Technologies (ICMAT 2009), Singapore, 3-8 July, 2009. *Invited. Session chair.*
49. Fifteenth International Conference on the Strength of Materials (ICSMA15), Dresden, Germany, 16-21 August, 2009. *Plenary Lecture.*
50. 7th International Conference on Bulk Metallic Glasses (BMG VII), Busan, Korea, November 1-5, 2009. *Invited.*
51. "Symposium D: Advanced and Strategic Materials" in the 63rd Annual Technical Meeting (ATM) held in conjunction with the National Metallurgist's Day of the Indian Institute of Metals (IIM), November 16-17, 2009, Kolkata. *Keynote.*
52. International Conference on Nanoscience and Technology (ICONSAT-2010) held at I.I.T. Bombay, during February 17-20, 2010. *Invited.*
53. Indo-American Frontiers of Engineering Conference 2010 held in Agra during March 11-13, 2010. *Invited speaker in the Advanced Engineering Materials session. Invited.*
54. Conference on "Emergent Properties and Novel Behavior at the Nanoscale," held at JNCASR during April 26-27, 2010. *Invited.*
55. International Conference on Composites for 21st Century: Current & Future Trends, 4-7 January 2011, IISc, Bangalore. *Invited.*



56. Fifth "Flow and Fracture of Advanced Glasses" workshop (FFAG-5) fifth edition of the Flow and Fracture of Advanced Glasses (FFAG-5) workshop, held in Saint-Malo (France) during March 20-25, 2011. *Invited.*
57. The 8<sup>th</sup> International Conference on Bulk Metallic Glasses (BMGVIII), held in Hong Kong during May 15-19, 2011. *Invited.* Session chair.
58. Fourth International Indentation Workshop (IIW4) held during 3-8 July, 2011 at Seoul National University, Seoul, Korea. *Invited.* Session chair.
59. Workshop on mechanical behavior of systems at small length scales-3 held during September 18-21, 2011 at Trivandrum. *Invited speaker* and co-organizer.
60. International Conference on Nanoscience and Technology (ICONSAT-2012) held during January 20-23, 2012 at Hyderabad. *Invited.*
61. James A Krumhansl Symposium with the theme of "Unifying Concepts in Materials," 6-8 February, 2012, Bangalore, India. *Invited.*
62. Indo-French Workshop on Glasses and Glass-ceramics, Lille, France, June 2012. *Invited.*
63. Winter School-2012 on Frontiers in Materials Science jointly organized by ICMS, JNCASR and University of Cambridge, December 2012. *Invited.*
64. Chemistry: Synthesis, Structure and Dynamics: A Conference on Crystal Engineering, Coorg, December 2012. *Invited.*
65. Ninth International Conference on Bulk Metallic Glasses (BMGIX), held in Xiamen, China, December 2012. *Plenary.* Session chair.
66. Workshop on mechanical behavior of systems at small length scales-4, to be held in Coorg during February 2012. *Invited speaker* and co-organizer.
67. Cambridge-Bangalore workshop on Advanced Materials for Energy and Sustainable Manufacturing, University of Cambridge, UK, March 2013. *Invited speaker.*
68. Indo-UK Joint Seminar on Functional and Energy Materials, Manufacturing and Structures, jointly organized by INAE and RAEng, UK at University of Hyderabad, March 2013. *Invited talk, session chair.*
69. First Indo-French School on Materials for the Future, Poitiers, France, April 15-19, 2013, Organized by the Pprime Institute, CNRS and Poitiers University. *Invited.*
70. Ninth JNCASR Research Conference on 'Chemistry of Materials-2013', Trivandrum, October 2013. *Invited.*
71. Leopoldina-INSA Symposium on Nano Sciences and Engineering, Halle, Germany, November 2013. *Invited.*
72. Workshop on Soft Matter, Self assembly and Dynamics, TIFR-TCIS and University of Hyderabad, January 2014. *Invited.*
73. Silver jubilee Annual General Meeting of the Materials Research Society of India (MRSI), Bangalore, February 2014. *Prize Lecture.*
74. 6th International Workshop on Advanced Materials (IWAM-2014), February 23-25, 2014, Ras Al Khaimah, UAE. *Invited.* Session chair.
75. International conference on Manufacturing and Materials, March 27-29, 2014, NITK Surathkal. *Keynote.*
76. Advanced Materials: Current Trends and Future Prospects, Manali, May 27 - 31 2014. *Invited.*
77. Tenth International Conference on Bulk Metallic Glasses (BMG X), Shanghai, China, June 2014. *Invited.*

78. Fifteenth International Conference on Rapidly Quenched and Metastable Materials (RQ15), Shanghai, China, August 2014. *Keynote & session chair.*
79. SJTU Materials Leaders Forum, No. 1: Frontiers of Materials Education, Shanghai Jiao Tong University, Shanghai, China, August 2014. *Invited.*
80. Seventh Bangalore India NANO 2014 Conference, Bangalore, December 2014. *Invited.*
81. One day symposium on “Materials Science Approaches for Solving Drug Formulation Challenges,” University of Hyderabad, December 2014. *Lead Speaker.*
82. Nano India 2015, hosted by SASTRA University, Thanjavur, January 2015. *Plenary Lecture.*
83. Regional Conference of Young Scientists on “Nanoscience & Nanomaterials” organized by TWAS Regional Office at JNCASR, Jakkur, February 2015. *Invited.*
84. First International Conference on Applied Chemistry, King Abdulaziz University, Jeddah, KSA, November 2015. *Invited.*

### **SEMINARS/LECTURES**

1. Mechanical Behavior of Materials at the Continuing Education Programme on Advanced Materials, organized by DRDL, Hyderabad, September 2002.
2. Department of Mat. Sci. & Engineering, Northwestern Univ., Evanston, IL, USA, September 2002.
3. General Motors Research and Development Center, Warren, MI, USA, October 2002.
4. Defense Metallurgical Research Laboratories, Hyderabad, February 2003.
5. Department of Applied Mechanics, IIT-Delhi, New Delhi, March 2003.
6. Materials and Manufacturing Directorate, Air Force Research Laboratory, Wright Patterson AFB, Dayton, OH, USA, July 2003.
7. Department of Metallurgical Engineering, Banaras Hindu University, Varanasi, February 2004.
8. The Gordon Seminar Series, Department of Materials Science and Metallurgy, University of Cambridge, UK, May 2004.
9. Corporate Strategic Research, ExxonMobil Research & Engineering, NJ, USA, June 2005.
10. National Level Technical Symposium, METTLE-2006, Department of Metallurgical & Materials Engineering, National Institute of Technology, Tiruchunapalli, TN. March 2-3, 2006.
11. Department of Materials, Hahn-Meitner Institute Berlin, Germany, June 2006.
12. Training Programme on “Materials Science & Technology for Aero Space Applications,” Vikram Sarabhai Space Centre, Trivandrum, October 2006.
13. Applied Mechanics Laboratory, University of Rennes, France, December 2006.
14. Department of Metallurgical Engineering, Andhra University, Visakhapatnam, December 2006.
15. GITAM College of Engineering, Visakhapatnam, December 2007.
16. Second DST-NIAS Workshop on Dimensions of Nanotechnology, NIAS, Bangalore, March 2007.
17. Institute of Materials, Ruhr University Bochum, Germany, June 2007.
18. Department of Materials and Metallurgical Engineering, IIT-Kanpur, Kanpur, August 2007.
19. Department of Metallurgical and Materials Engineering, IIT-Madras, Chennai, August 2007.
20. Third DST-NIAS Workshop on Dimensions of Nanotechnology, NIAS, Bangalore, September 2007.
21. Short term course on “Smart Materials,” organized by Thiagarajar College of Engineering, Madurai, September 2007.
22. Department of Materials, ETH Zurich, Switzerland, June 2008.
23. Laboratory for Mechanics of Materials and Nanostructures, Swiss Federal Laboratories for Materials Testing and Research (EMPA), Thun, Switzerland, June 2008.

24. Institute for High Performance Computing, Singapore, July 2008.
25. Phantom Works, Boeing Corporation, St. Louis, USA, October 2008.
26. Applied Mechanics Laboratory, University of Rennes, France, May 2009.
27. The 4<sup>th</sup> European School in Materials Science "Mechanical Properties of Complex Metallic Alloys," of the European Network of Excellence "Complex Metallic Alloys," May 25 - 30, 2009, Ljubljana, Slovenia. *Invited Lecturer*. (Set of lectures for six hours.)
28. Laboratory for Mechanics of Materials and Nanostructures, Swiss Federal Laboratories for Materials Testing and Research (EMPA), Thun, Switzerland, May 2009.
29. Volvo Aero Corporation, Trollhatten, Sweden, June 2009.
30. 'Latest Trends in Aluminum Alloys, Composites & Nano-Smart Materials' course jointly organized by National Academy of Defence Production, Nagpur & Networking Resource Centre for Materials (NRC-M), Department of Materials Engineering, Indian Institute of Science, Bangalore, October 26 to October 30, 2009.
31. Division of Materials Science and Engineering, Hanyang University, Seoul, Korea, November 5, 2009.
32. Invited speaker at the Annual Faculty meeting of the Jawaharlal Nehru Centre for Advanced Scientific Research, November 2009.
33. Defence Metallurgical Research Labs, Hyderabad, December 2009.
34. School of Engineering Sciences & Technology, University of Hyderabad, December 2009.
35. Department of Mechanical Engineering, IISc, January 2009.
36. School on Glass Formers and Glasses, organized by The International Centre for Theoretical Sciences, TIFR, Mumbai and International Centre for Materials Science, JNCASR, January 4-20, 2010, Bengaluru.
37. Frontier Lecture series on "Advances in Materials" held on 21-22 January 2010 at S.P. University, Gujarat.
38. Workshop on "Fatigue and Fracture Behavior of Advanced Materials," February 2010, DMRL, Hyderabad.
39. Indira Gandhi Center for Atomic Research, Kalpakkam, May 2010.
40. 3rd SERC Summer School on Solid State Chemistry, held at SSCU, I.I.Sc. during June 17- July 7, 2010.
41. 76<sup>th</sup> Annual meeting of Indian Academy of Sciences held during 12-14 November 2010 at National Institute of Oceanography, Goa. Invited.
42. Joint Materials and Solid Mechanics Seminar Series, Division of Engineering, Brown University, April 2012.
43. Special seminar, Department of Mechanical Engineering, M.I.T., USA, April 2012.
44. Hysitron Corporation's Open Day, Minneapolis, USA, June 2012.
45. Department of Mechanical Engineering, Yale University, June 2012.
46. Center for Advanced Metallic and Ceramic Systems (CAMCS), Johns Hopkins University, USA, June 2012.
47. Department of Mechanical Engineering, Yale University, USA, July 2012.
48. Department of Materials Science & Engineering, University of California –Davis, USA, July 2012.
49. Graduate Aeronautical Laboratories (GALCIT), California Institute of Technology, USA, July 2012.
50. Saint-Gobain R & D Center, Northboro, MA, USA, July 2012.
51. ExxonMobil R&D Center, Annandale, NJ, USA, August 2012.

52. Seminar on Helicopter Technologies, Hindustan Aeronautics Ltd., Bangalore, October 2012.
53. R&D Division, Bharat Heavy Electricals Ltd., Hyderabad, January 2013.
54. Centre for Nano Science and Engineering, IISc, March 2013.
55. Special lecture on the occasion of National Technology Day Celebrations, Naval Science & Technology Laboratory, Visakhapatnam, May 2013.
56. Lehrstuhl für Metallische Werkstoffe, Universität des Saarlandes, Saarbrücken, Germany, June 2014.
57. Laboratoire d'Etude des Microstructures et de Mécanique des Matériaux, Université de Lorraine, Metz, France, June 2014
58. Institut P', CNRS-ISAE-ENSMA, Université de Poitiers, Poitiers, France, July 2014.
59. International Center for Frontier Research in Chemistry (FRC), Université de Strasbourg, Stasbourg, July 2014.
60. Department of Chemistry, IIT-Madras, January 2015.

### TEACHING

Title of course	Credits	No. of times offered	Taught alone/jointly
MT 253: Mechanical Behavior of Materials	3:0	11	3 times jointly and 7 times alone
MT 226: Fracture and Fatigue: Mechanics and Micromechanisms	3:0	3	Jointly
MT 220: Microstructural Design and Development of Engineering Materials	3:0	4	Jointly

### CONFERENCE ORGANIZATION

1. Organizing Committee Member, "Perspectives in Physical Metallurgy and Materials Science," July 2001.
2. Convener, "Light Materials: Science and Technology," April 2003.
3. Organizing Committee Member, "Second ISAMPE National Conference on Composites and Twelfth National Seminar on Aerospace Structures with the theme "Advances in Composites," September 2003.
4. Organizing Committee Member, "Workshop on Mechanical Behavior of Systems at Small Length Scales," January 2004.
5. Organizing Committee Member, "International Conference on Advances in Structural Integrity," July 2004.
6. Co-chair & Member, Scientific Committee, "Symposium (E) on Mechanical Behavior of Nano- and Micro-Scale Systems," of the International Conference on Materials for Advanced Technologies (ICMAT 2005), 3 - 8 July, 2005, Singapore.
7. Co-organizer, "Nano- and Micro-Scale Mechanics of Engineering Materials and Biological Systems," November 28 & 29, 2006 at Norton's Woods Conference Center, American Academy of Arts & Sciences, Cambridge, MA 02138, USA.
8. Co-convener, "International Workshop on Bulk Metallic Glasses: Science and Technology," January 11-16, 2007, Bangalore.
9. Organizing Committee Member, "Workshop on Mechanical Behavior of Systems at Small Length Scales -2," February 2007, Bangalore.

10. Symposium on "Mechanical Behavior of Nano- and Micro-Scale Systems," (second in the series) of the International Conf. on Materials for Advanced Technologies (ICMAT 2009), 3 - 8 July, 2009, Singapore. *Co-chair & Member, Scientific Committee.*
11. Co-chair, 4<sup>th</sup> and 5<sup>th</sup> Indo-US Frontiers of Engineering Symposiums (held in 2012 and 2014, respectively).
12. Convener, Indo-US Workshop on Frontiers of Structural Materials Research, Coorg, KA, India, February 2015.

Peer Reviewer for the following Journals.

- i. Journal of Materials Research
- ii. Acta Materialia (outstanding reviewer recognition)
- iii. Scripta Materialia (outstanding reviewer recognition)
- iv. Metallurgical and Materials Transactions A
- v. International Journal of Fracture
- vi. Bulletin of Materials Science
- vii. Transactions of the Indian Institute of Metals
- viii. Indian Journal of Pure and Applied Physics
- ix. Defence Science Journal
- x. Journal of the Indian Institute of Science
- xi. Journal of Materials Science
- xii. Materials Science and Engineering A
- xiii. Journal of Computational Materials Science
- xiv. Advanced Engineering Materials
- xv. Journal of Alloys and Compounds
- xvi. International Journal of Solids and Structures
- xvii. Journal of Non-crystalline Solids
- xviii. Current Science
- xix. Journal of Composite Materials
- xx. Journal of Materials Research
- xxi. Journal of Physics D: Applied Physics
- xxii. Materials Letters
- xxiii. Nanotechnology
- xxiv. Mechanics of Materials
- xxv. Intermetallics
- xxvi. Science and Technology of Advanced Materials
- xxvii. Materials Chemistry and Physics
- xxviii. Experimental Mechanics
- xxix. Indian Journal of Engineering and Materials Sciences
- xxx. International Journal of Fatigue
- xxxi. Fatigue & Fracture of Engineering Materials & Structures
- xxxii. Solid State Communications
- xxxiii. Journal of the American Chemical Society
- xxxiv. Applied Physics Letters
- xxxv. Journal of Physical Chemistry
- xxxvi. Modeling and Simulation in Materials Science and Engineering
- xxxvii. International Journal of Plasticity
- xxxviii. Journal of Mechanics and Physics of Solids
- xxxix. Materials Science and Engineering B
- xl. ACS Nano
- xli. Physical Review Letters
- xlii. Nature communications

## LIST OF PUBLICATIONS

### *International peer reviewed Journals*

#### **1993**

1. U. Ramamurty, A. Bandyopadhyay, and E. S. Dwarakadasa, "Effect of heat treatment environment on Li depletion and on mechanical properties in Al-Li alloy sheets," *Journal of Materials Science*, vol. 28, pp. 6340-46, 1993.
2. U. Ramamurty, A. S. Kim, S. Suresh, and J. J. Petrovic, "Micromechanisms of creep-fatigue crack growth in a silicide-matrix composite with SiC particles," *Journal of the American Ceramic Society*, vol. 76, pp. 1953-64, 1993.

#### **1994**

3. U. Ramamurty, S. Suresh, and J. J. Petrovic, "Effect of carbon addition on elevated temperature crack growth resistance in (Mo,W) Si<sub>2</sub> SiC<sub>p</sub> composite," *Journal of the American Ceramic Society*, vol. 77, pp. 2681-88, 1994.
4. U. Ramamurty, T. Hansson, and S. Suresh, "High-temperature crack growth in monolithic and SiC<sub>w</sub>-reinforced silicon nitride under static and cyclic loads," *Journal of the American Ceramic Society*, vol. 77, pp. 2985-99, 1994.

#### **1996**

5. T. Hansson, U. Ramamurty, C. Bull, and R. Warren, "Elevated temperature fracture behavior of monolithic and SiC<sub>w</sub> - reinforced silicon nitride under quasi-static loads," *Materials Science & Engineering A*, vol. 209, pp. 137-48, 1996.
6. U. Ramamurty, "Retardation of fatigue crack growth in ceramics by glassy ligaments: A rationalization," *Journal of the American Ceramic Society*, vol. 79, pp. 945-52, 1996.
7. U. Ramamurty, F. -C. Dary, and F. W. Zok, "A method for measuring residual strains in fiber reinforced titanium matrix composites," *Acta Materialia*, vol. 44, pp. 3397-406, 1996.
8. U. Ramamurty, F. W. Zok, and F. A. Leckie, "Effects of cladding on the tensile properties of titanium matrix composites," *Materials Science & Engineering A*, vol. 214, pp. 62-67, 1996.

#### **1997**

9. U. Ramamurty, F. W. Zok, F. A. Leckie, and H. E. Deve, "Strength variability in alumina fiber-reinforced aluminum matrix composites," *Acta Materialia*, vol. 45, pp. 4603-13, 1997.
10. U. Ramamurty, F. W. Zok, and F. A. Leckie, "Role of cladding in the notched tensile properties of a titanium matrix composite," *Metallurgical & Materials Transactions A*, vol. 28, pp. 2731-40, 1997.
11. U. Ramamurty, "Design considerations for selectively reinforced Ti-Matrix composites," *Materials & Design*, vol. 18, pp. 183-194, 1997.

#### **1999**

12. S. Sridhar, A. E. Giannakopoulos, S. Suresh, and U. Ramamurty, "Electrical response during indentation of piezoelectric materials: a new method for material characterization," *Journal of Applied Physics*, vol. 85, pp. 380-387, 1999.
13. A. Paul, T. Seshacharyulu, and U. Ramamurty, "Tensile strength of a closed-cell Al foam in the presence of notches and holes," *Scripta Materialia*, vol. 40, pp. 809-814, 1999.
14. U. Ramamurty and T. Seshacharyulu, "Effect of spatial inhomogeneity in fiber packing on the strength variability of Al-matrix composites," *Materials Science & Engineering A*, vol. 268, pp. 97-103, 1999.
15. U. Ramamurty, S. Sridhar, A. E. Giannakopoulos, and S. Suresh, "An experimental study of spherical indentation on piezoelectric materials," *Acta Materialia*, vol. 47, pp. 2417-2430, 1999.
16. J. A. Heathcote, X.-Y. Gong, J. Yang, U. Ramamurty, and F. W. Zok, "In-plane mechanical properties of an all-oxide ceramic composite," *Journal of the American Ceramic Society*, vol. 82, pp. 2721-2730, 1999.

17. U. Ramamurty, "Fatigue in selectively-fiber-reinforced Ti-matrix composites," *Metallurgical and Materials Transactions A*, vol. 30A, pp. 2237-2248, 1999.

#### 2000

18. A. Paul and U. Ramamurty, "Strain rate sensitivity in a closed-cell Al foam," *Materials Science & Engineering A*, vol. 281, pp. 1-7, 2000.
19. N. Nagendra, U. Ramamurty, T. T. Goh, and Y. Li, "Effect of crystallinity on the impact toughness of a La-based bulk metallic glass," *Acta Materialia*, vol. 48, pp. 2603-2615, 2000.
20. A. Kishen, U. Ramamurty, and A. Asundi, "Experimental studies on the nature of property gradients in human dentine," *Journal of Biomedical Materials Research*, vol. 51, pp.650-659, 2000.
21. R. Vaidyanathan, D. C. Dunand, and U. Ramamurty, "Fatigue crack growth in shape memory NiTi and NiTi-TiC composites," *Materials Science & Engineering A*, vol. 289, pp. 208-216, 2000.
22. P. Peralta, U. Ramamurty, S. Suresh, G. H. Campbell, W. E. King, and T. E. Mitchell, "Crystallographic effects of the fatigue fracture of copper-sapphire interfaces," *Philosophical Magazine A*, vol. 80, pp.2109-2129, 2000.

#### 2001

23. P. Peralta, U. Ramamurty, S. Suresh, G. H. Campbell, W. E. King, and T. E. Mitchell, "Effects of anisotropy and slip geometry on fatigue fracture of Cu/sapphire bicrystals," *Materials Science & Engineering A*, vol. 314, pp.55-66, 2001.

#### 2002

24. U. Ramamurty, I.M.L. Lee, J. Basu, and Y. Li, "Embrittlement of a bulk metallic glass due to low temperature annealing," *Scripta Materialia*, vol. 47, pp. 107-111, 2002.

#### 2003

25. P. Sudheer Kumar, S. Ramachandra, and U. Ramamurty, "Effect of displacement rate on the indentation behavior of an aluminum foam," *Materials Science & Engineering A*, vol. 347, pp. 330-337, 2003.
26. Y.-L. Shen and U. Ramamurty, "Constitutive response of passivated copper films to thermal cycling," *Journal of Applied Physics*, vol. 93, pp. 1806-1812, 2003.
27. J. Basu, N. Nagendra, Y. Li and U. Ramamurty, "Microstructure and mechanical properties of a partially-crystallized La-based bulk metallic glass," *Philosophical Magazine*, vol. 83, pp. 1747-1760, 2003.
28. S. Ramachandra, P. Sudheer Kumar, and U. Ramamurty, "Impact energy absorption in an Al foam at low velocities," *Scripta Materialia*, vol. 49, pp. 741-745, 2003.
29. Y.-L. Shen and U. Ramamurty, "Temperature dependent inelastic response of passivated copper films: experiments, analyses and implications," *Journal of Vacuum Science and Technology B*, vol. 21, pp.1258-1264, 2003.

#### 2004

30. U. Ramamurty and M. C. Kumaran "Mechanical property extraction through conical indentation of a closed-cell aluminum foam," *Acta Materialia*, vol. 52, pp. 181-89, 2004.
31. U. Ramamurty and A. Paul, "Variability in the mechanical properties of a metal foam," *Acta Materialia*, vol. 52, pp. 869-876, 2004.
32. S. P. Tantry, S. K. Ramasesha , J.-S. Lee, T. Yano, and U. Ramamurty "Effect of double reinforcements on elevated temperature strength and toughness of molybdenum disilicide," *Journal of the American Ceramic Society*, vol. 87, pp. 626-32, 2004.
33. M. N. M. Patnaik, R. Narasimhan, and U. Ramamurty, "Spherical indentation response of metallic glasses," *Acta Materialia*, vol. 52, 3335-3345, 2004.
34. S. Jana, U. Ramamurty, K. Chattopadhyay, and Y. Kawamura, "Subsurface deformation during Vickers indentation of bulk metallic glasses," *Materials Science & Engineering A*, vols. 375-377, pp. 1191-95, 2004.



35. S. Jana, R. Bhowmik, Y. Kawamura, K. Chattopadhyay, and U. Ramamurty, "Deformation morphology underneath the Vickers indent in a Zr-based bulk metallic glass," *Intermetallics*, vol. 12, pp. 1097-1102, 2004.

## 2005

36. U. Ramamurty, S. Jana, Y. Kawamura, and K. Chattopadhyay, "Hardness and plastic deformation in a bulk metallic glass," *Acta Materialia*, vol. 53, pp. 705-717, 2005.
37. P. Murali and U. Ramamurty, "Embrittlement of a bulk metallic glass due to sub-T<sub>g</sub> annealing," *Acta Materialia*, vol. 53, pp. 1467-1478, 2005.
38. N. Chollacoop and U. Ramamurty, "Experimental assessment of the representative strains in instrumented sharp indentation," *Scripta Materialia*, vol. 53, pp. 247-251, 2005.
39. U. Ramamurty, "Assessment of load transfer characteristics of a fiber-reinforced titanium-matrix composite," *Composite Science and Technology*, vol. 65, pp. 1815-1825, 2005.
40. N. Suresh and U. Ramamurty, "The effect of ageing on the damping properties of Cu-Al-Ni shape memory alloys," *Smart Materials and Structures*, vol. 14, N47-N51, 2005.

## 2006

41. R. Raghavan, P. Murali, and U. Ramamurty, "Ductile to brittle transition in the Zr<sub>41.2</sub>Ti<sub>13.75</sub>Cu<sub>12.5</sub>Ni<sub>10</sub>Be<sub>22.5</sub> bulk metallic glass," *Intermetallics*, vol. 14, pp. 1051-54, 2006.
42. N. Chollacoop and U. Ramamurty, "Robustness of the algorithms for extracting plastic properties from the instrumented sharp indentation data" *Materials Science and Engineering A*, vol. 423, pp.41-45, 2006.
43. S. R. C. Vivekchand, U. Ramamurty, C. N. R. Rao, "Mechanical properties of inorganic nanowire reinforced polymer-matrix composites," *Nanotechnology*, vol. 17, pp. S344-S350, 2006.
44. A. Datta, U. Ramamurty, S. Ranganathan, and U. V. Waghmare, "Crystal structures of a Mg-Zn-Y alloy: a first-principles study," *Computational Materials Science*, vol. 37, pp.69-73, 2006.
45. R. Bhowmick, R. Raghavan, K. Chattopadhyay, and U. Ramamurty, "Plastic flow softening in a bulk metallic glass," *Acta Materialia*, vol. 54, pp. 4221-4228, 2006.
46. G. Srikant, N. Chollacoop, and U. Ramamurty, "Plastic strain distribution underneath a Vickers indenter: role of yield strength and work hardening exponent" *Acta Materialia*, vol. 54, pp. 5171-78, 2006.

## 2007

47. P. Murali, U. Ramamurty, V.B. Shenoy, "Strain accommodation in inelastic deformation of glasses," *Physical Review B*, vol. 75, 024203, 2007.
48. H. W. Jin, R. Ayer, J. Koo, R. Raghavan, and U. Ramamurty, "Reciprocating wear mechanisms in a Zr-based bulk metallic glass," *Journal of Materials Research*, vol. 22, pp. 264-273, 2007.
49. R. Bhowmick, S. Bysakh, M. Yamasaki, Y. Kawamura, U. Ramamurty, and K. Chattopadhyay, "Microstructure and mechanical properties of electron beam weld joints of a Zr<sub>41</sub>Ti<sub>14</sub>Cu<sub>12</sub>Ni<sub>10</sub>Be<sub>23</sub> bulk metallic glass with Zr," *Journal of Materials Research*, vol. 22, pp. 437-444, 2007.
50. N. Suresh and U. Ramamurty, "Effect of aging on mechanical behavior of single crystal Cu-Al-Ni shape memory alloys," *Materials Science and Engineering A*, vol. 454-455, pp. 492-499, 2007.
51. K. Eswar Prasad, R. Raghavan, and U. Ramamurty, "Temperature dependence of pressure sensitivity in a metallic glass," *Scripta Materialia*, vol. 57, pp. 121-124, 2007.
52. M.A. Azeem, C.D. Shortall, and U. Ramamurty, "Tensile properties of stainless steel sandwich sheets with fibrous cores," *Scripta Materialia*, vol. 57, pp. 221-224, 2007.
53. C.A. Schuh, T.C. Hufnagel, and U. Ramamurty, "Mechanical behavior of amorphous alloys," *Acta Materialia*, vol. 55, pp. 4067-4109, 2007.
54. B. Viswanath, R. Raghavan, U. Ramamurty, and N. Ravishankar, "Mechanical properties and anisotropy in hydroxyapatite single crystals," *Scripta Materialia*, vol. 57, pp. 361-364, 2007.

55. M. Kolluri, S. Karthikeyan, and U. Ramamurty, "Effect of lateral constraint on the mechanical properties of a closed-cell Al foam: I. Experiments," *Metallurgical and Materials Transactions A*, vol. 38, pp. 2006-2013, 2007.
56. S. Karthikeyan, M. Kolluri, and U. Ramamurty, "Effect of lateral constraint on the mechanical properties of a closed-cell Al foam: II. Strain hardening models," *Metallurgical and Materials Transactions A*, vol. 38[9], pp. 2014-2023, 2007.
57. R. Bhowmick, B. Majumdar, D.K. Misra, U. Ramamurty, and K. Chattopadhyay, "Synthesis of bulk metallic glass composites using high oxygen containing Zr sponge," *Journal of Materials Science*, vol. 42, pp. 9359-9365, 2007.
58. I. Sen, S. Tamirasakandala, D. Miracle, and U. Ramamurty, "Microstructural effects on the mechanical behavior of B modified Ti-6Al-4V alloys" *Acta Materialia*, vol. 55, pp. 4983-4993, 2007.
59. P. Tandaiya, R. Narasimhan, U. Ramamurty, "Mode I crack tip fields in amorphous materials with application to metallic glasses," *Acta Materialia*, vol. 55, pp. 6541-6552, 2007.

## 2008

60. N. Suresh and U. Ramamurty, "Aging response and its effect on the functional properties of Cu-Al-Ni shape memory alloys," *Journal of Alloys and Compounds*, vol. 449, pp. 113-118, 2008.
61. M. Kolluri, M. Mukherjee, F. Garcia-Moreno, J. Banhart, and U. Ramamurty, "Fatigue of a laterally-constrained closed cell aluminum foam," *Acta Materialia*, vol. 56, pp. 1114-1125, 2008.
62. P. Murali, U. Ramamurty, and V. B. Shenoy, "Factors influencing deformation stability of binary glasses," *Journal of Chemical Physics*, vol. 128, art. no. 104508, 2008.
63. R. Raghavan, R. Ayer, H. W. Jin, C. N. Marzinsky and U. Ramamurty, "Effect of shot peening on the fatigue life of a Zr-based bulk metallic glass," *Scripta Materialia*, vol. 59, pp. 167-170, 2008.
64. R. Raghavan, P. Murali, and U. Ramamurty, "Influence of cooling rate on the enthalpy relaxation and fragility of a metallic glass," *Metallurgical and Materials Transactions A*, vol. 39, pp. 1573-1577, 2008.
65. Aditi Datta, U.V. Waghmare, and U. Ramamurty, "Structure and stacking faults in layered Mg-Zn-Y alloys: a first-principles study," *Acta Materialia*, vol. 56, pp. 2531-2539, 2008.
66. Kaushik Das, C. Karthik, K.B.R. Varma, U. Ramamurty, "Nano- and micro-indentation studies on lithium borate- barium bismuth niobate glasses," *Journal of Non-crystalline Solids*, vol. 354, pp. 3793-98, 2008.
67. B. Viswanath, R. Raghavan, N. P. Gurao, U. Ramamurty, and N. Ravishankar, "Mechanical properties of tricalcium phosphate single crystals grown by molten salt synthesis," *Acta Biomaterialia*, vol. 4, pp. 1448-54, 2008.
68. K. Gopinath, A. K. Gogia, S.V. Kamat, R. Balamuralikrishnan, and U. Ramamurty, "Tensile properties of Ni-based superalloy 720Li: temperature and strain rate effects," *Metallurgical and Materials Transactions A*, vol. 39, pp.2340-50, 2008.
69. M. F.-X. Wagner, Niraj Nayan, and U. Ramamurty, "Healing of fatigue damage in Ni-Ti shape memory alloys," *Journal of Physics D: Applied Physics*, vol. 41, art. No. 185408, pp. 1-4, 2008.
70. Debdutta Roy, V. Buravalla, P.D. Mangalgiri, S. Allegavi, and U. Ramamurty, "Mechanical characterization of NiTi SMA wires using a dynamic mechanical analyzer," *Materials Science and Engineering A*, vol. 494, pp. 429-435, 2008.
71. V. Keryvin, K. Eswar Prasad, Y. Gueguen, J.-C. Sangleboeuf, and U. Ramamurty, "Temperature dependence of mechanical properties and pressure sensitivity in metallic glasses below glass transition," *Philosophical Magazine*, vol. 88, pp.1773-1790, 2008.
72. Niraj Nayan, Debdutta Roy, V. Buravalla, and U. Ramamurty, "Unnotched fatigue behaviour of an austenitic Ni-Ti shape memory alloy," *Materials Science and Engineering A*, vol. 497, pp. 333-340, 2008.

73. P. Tandaiya, U. Ramamurty, G. Ravichandran, and R. Narasimhan, "Effect of Poisson's ratio on crack tip fields and fracture behavior of metallic glasses," *Acta Materialia*, vol. 56, pp. 6077-86, 2008.

## 2009

74. Aditi Datta, U. V. Waghmare, and U. Ramamurty, "Density functional theory study on stacking faults and twinning in Ni nanofilms," *Scripta Materialia*, vol. 60, pp. 124-127, 2009.
75. K. Gopinath, A. K. Gogia, S.V. Kamat, and U. Ramamurty, "Dynamic strain ageing in Ni-based superalloy 720Li," *Acta Materialia*, vol. 57, pp. 1243-1253, 2009.
76. A. Dubach, R. Raghavan, J. F. Löffler, J. Michler, U. Ramamurty, "Micropillar compression studies on a bulk metallic glass in different structural states," *Scripta Materialia*, vol. 60, pp. 567-570, 2009.
77. K. Eswar Prasad, V. Keryvin, and U. Ramamurty, "Pressure sensitive flow and constraint factor in amorphous materials below glass transition," *Journal of Materials Research*, vol. 24, pp. 890-897, 2009.
78. S. N. Kamble, D. V. Kubair, and U. Ramamurty, "Indentation strength of a piezoelectric ceramic: experiments and simulations," *Journal of Materials Research*, vol. 24, pp. 926-935, 2009.
79. Barun Das, K. Eswar Prasad, U. Ramamurty, and C. N. R. Rao, "Nano-indentation studies on polymer matrix composites reinforced by few-layer graphene," *Nanotechnology*, vol. 20, 125705, 2009.
80. B.-G. Yoo, K.-W. Park, J.-C. Lee, U. Ramamurty, and J.-I. Jang, "Role of free volume in strain softening of as-cast and annealed bulk metallic glass," *Journal of Materials Research*, vol. 24, 1405-1416, 2009.
81. R. Raghavan, P. Murali and U. Ramamurty, "On factors influencing the ductile to brittle transition in a bulk metallic glass," *Acta Materialia*, vol. 57, pp. 3332-3340, 2009.
82. K. Gopinath, A. K. Gogia, S.V. Kamat, R. Balamuralikrishnan, and U. Ramamurty, "Low Cycle Fatigue Behavior of a Low Interstitial Ni-base Superalloy," *Acta Materialia*, vol. 57, pp. 3450-3459, 2009.
83. R. Raghavan, V. V. Shastry, A. Kumar, T. Jayakumar, and U. Ramamurty, "Toughness of as-cast and partially crystallized of a bulk metallic glass," *Intermetallics*, vol. 17, pp. 835-839, 2009.
84. A. Dubach, K. Eswar Prasad, R. Raghavan, J. F. Löffler, J. Michler, U. Ramamurty, "Free-volume dependent pressure sensitivity of Zr-based bulk metallic glass," *Journal of Materials Research*, vol. 24, pp. 2697-704, 2009.
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#### **"Hot Paper" Listing**

Some of the above papers were among those which were highly downloaded. The period(s) over which the download statistics are collected and the rank of the paper (within the 25) –both in bold case- are listed below.

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**Citation information (as on 28-01-2016 in Scopus):**

<b>Total number of citations received:</b>	<b>6146</b>
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