

Vilupanur A. Ravi

1. Professional Preparation

University of Madras, Chennai	Physics	B.Sc.	1980
Indian Institute of Science, Bangalore	Metallurgy (with distinction)	B.E.	1983
The Ohio State University, Columbus	Metallurgical Engineering	M.S.	1986
The Ohio State University, Columbus	Metallurgical Engineering	Ph.D.	1988

2. Appointments

- Cal Poly Pomona, Pomona, CA (2000-Present)
 - 9/2006 – Present Tenured Professor
 - 7/2010 – 6/2011 Department Chair
 - 9/2019 – 6/2020 Director of Partnerships, College of Engineering
 - 1/2018 – 8/2019 Director of Research and Partnerships, College of Engineering
 - 9/2000 – 9/2006 Associate Professor
- Technologist, W. L. Gore and Associates, Inc., Elkton, MD (June 1994 – August 2000)
- Member of Technical Staff, Lanxide Corporation, Newark, DE (October 1988 – June 1994)

3. Publications/Patents

Publications (96 peer-reviewed publications including 33 journal articles, 61 conference papers, and 2 book chapters. Also, co-edited 3 bound conference proceedings volumes).

- i. Samad Firdosy, Nicholas Ury, Andrew B. Kustas, Jay D. Carroll, Priya Pathare, Zachary Casias, Daniel Tung, Don Susan, N. Scott Bobbitt, Michael Chandross, J.P. Borgonia, **Vilupanur A. Ravi**, R. Peter Dillon, "Compositionally graded joints between magnetically dissimilar alloys achieved through directed energy deposition," Scripta Materialia, Volume 202, Article 114005, 2021
- ii. A. Jalbuena, Nicholas Ury, Jaewan Bae, Christopher Faraj, Kailey Hanan, Shahan Kasnakjian, J. K. Logier, R. S. Mishra, X. Wang, J. C. Earthman, and **V. Ravi**, "Corrosion of Al_{0.1}CoCrFeNi High Entropy Alloy in a Molten Eutectic Salt," Journal of The Electrochemical Society, 166 (11): C3488-C3492, 2019
- iii. Christopher Lopez, Armen Kvrnan, Shahan Kasnakjian, Armando Coronado, Sutine Sujittosakul, Obed Villalpando and **Vilupanur A. Ravi**, "Effect of Austenite Stability on Pack Aluminizing of Austenitic Stainless Steels" JOM, 67 (1): 61 – 67, 2015
- iv. James M. Ma, Samad A. Firdosy, Richard B. Kaner, Jean-Pierre Fleurial, and **Vilupanur A. Ravi**, "Hardness and fracture toughness of thermoelectric La₃-xTe₄," Journal of Materials Science, 49(3): 1150-1156, 2014
- v. Jesus A. Roman, Kourtney P. Steidel, Christopher G. Murphy, and **Vilupanur A. Ravi**,

“The Effect of Process Parameters on Pack Aluminizing of UNS S30400 Stainless Steel,” Corrosion/2021, paper no. C2021 – 16946 (Houston, TX: NACE, 2021)

- vi. Chi Ying Loh, Jared O. Butner, Connor J. Veronese, Christopher J. Faraj, and **Vilupanur A. Ravi**, “Corrosion Behavior of UNS S31600 in a Purified Molten Salt,” Corrosion/2021, paper no. C2021 – 16945 (Houston, TX: NACE, 2021)

Patents (22 US Patents and Patent Applications; 18 International Patents and Patent Applications; 6 NASA Tech Briefs).

- vii. Vilupanur A. Ravi, Samad Firdosy, Jean-Pierre Fleurial, Sabah K. Bux, Andrew Kindler, Shiao-Ping Siao Yen, “Ultra-light Ultra-Strong Proppants,” US Patent # US 2018/10017687B2 (7/10/2018)
- viii. Vilupanur A. Ravi, Juan Carlos Nava and Shahan Kasnakjian, “Innovative and Safe Method to conduct high temperature halogenation of metallic alloys,” US Patent # US 2018/9869629 B1 (1/16/2018)
- ix. Samad A. Firdosy, Billy Chun-Yip Li, Vilupanur A. Ravi, Jean-Pierre Fleurial, Thierry Caillat and Harut Anjunyan, “Compliant Interfacial Layers in Thermoelectric Devices” US Patent # US 9722163B2 (08/01/2017)
- x. C. R. Banning, J. T. Burke, A. S. Nagelberg, V. A. Ravi, M. A. Richmond, and C. C. Yang, “Method for manufacturing castable metal matrix composite bodies & bodies produced thereby,” US Patent # 6223805B1 (5/01/2001)

4. **Research Leadership**

Grants and contracts – a selection from the last 10 years

- V. Ravi (PI), “ICME development of a cold spray enabled corrosion resistant bimetallic structure for nuclear reactors”, QuesTek Innovations LLC / DoE, 5/3/2021 - 4/30/2023, \$ 175,998.00.
- V. Ravi (PI), “Investigation of Novel Nickel-Based Alloys for Molten Chloride Fast Reactor Structural Applications”, University of Cincinnati/DoE, 10/2/2020 - 9/30/2023, \$ 190,000.
- V. Ravi (PI), “Corrosion Inhibition of Stainless Steel Alloys”, Dynalene Inc./National Science Foundation, September 15, 2018 – August 31, 2021, \$ 150,000
- V. Ravi (PI), “Analysis of White Rust in Galvanized Steel”, California Steel Inc., January 15, 2019 – March, 2020, \$ 50,000
- V. Ravi (PI), “MRI: Acquisition of Scanning Electron Microscope”, National Science Foundation, August 14, 2014 – July 14, 2017, \$ 203,208
- V. Ravi (PI), “Effective Catalysts for Distributed Hydrogen Production”, San Diego State University Research Foundation/California Energy Commission, June 1, 2014 through May 31, 2015, \$95,000.00
- V. Ravi (PI): “Superhard Boride Coating”, Regents of the University of Los Angeles/National Science Foundation, October 1, 2009 – September 30, 2012, \$36,500.00

5. Leadership and Professionalism: Synergistic Activities

- Board of Directors & Southwest Regional Director, Sigma Xi, The Scientific Research Honor Society (2019 - 2022)
- President, American Association for the Advancement of Science – Pacific Division (2017 - 2018)
- Member, Board of Trustees, ASM International (2010- 2013)
- Member, Board of Trustees, Alpha Sigma Mu, Intl. Honor Society for MSE (2001 – 2008)
- Member (Ex-officio), Board of Trustees, ASM Foundation (2006 -2008)
- President, Alpha Sigma Mu, Intl. Honor Society for MSE (2002 – 2005)

6. Commitment to Diversity and Inclusiveness

I have mentored and supported hundreds of underrepresented students and first-generation college goers through (a) individual and group advising on curricular and career issues, (b) recruitment and participation in research projects, (c) facilitating connections with industry and national laboratory personnel, and professors in research-intensive institutions (d) encouraging/supporting/training students for participation in research competitions. I have served many scientific and professional organizations and have organized many symposia.

7. Mentoring

Mentored hundreds of students (undergraduate and graduate), and several engineers in industry. This year alone, six of my undergraduate project students were admitted to PhD programs in universities across the country. I have advised/am advising tens of graduate students for their thesis work. During the 2015 – 2020 period, I have published 10 articles in peer-reviewed journals with 16 student coauthors, and 35 peer-reviewed conference proceedings articles with 124 student co-authors. I have also co-authored with my students more than 120 presentations at national/regional /local conferences (e.g., AAAS, MST, RSCA); and supervised more than 200 undergraduate, graduate, community college and high school students. These students earned more than 50 awards at events such as poster competitions (e.g., TMS, NACE). I have also mentored underrepresented faculty and professionals.

8. Major Awards, Fellowships, Invited Lectureships, and Honors

Major Awards

- NACE Western Area Engineer of the Year, Western Area, NACE International (2016)
- NACE Distinguished Service Award, NACE International (2016)
- NACE Technical Achievement Award, NACE International (2015)
- Distinguished Engineering Educator Award, Orange County Engineering Council (2014)
- Provost's Award for Excellence in Scholarly and Creative Activities, Cal Poly Pomona (2013)
- Excellence in Research Award, College of Engineering, Cal Poly Pomona, 2013

Fellowships

- Fellow (FNAI), National Academy of Inventors (2020)
- Fellow (FNACE), NACE International (2016)
- Fellow (FAAAS), American Association for the Advancement of Science (2014)
- Fellow (FIIM), Indian Institute of Metals (2013)
- Fellow, Alpha Sigma Mu, The International Professional Honor Society for Materials Science and Engineering, (2010)
- Fellow (FIMMM), Institute of Materials, Minerals & Mining, UK (2009)
- Fellow (FASM), ASM International (2000)
- NASA Faculty Fellow, Jet Propulsion Laboratory, Pasadena, CA (2003)
- NRC Summer Faculty Fellow, Air Force Research Labs, Wright Patterson Air Force Base, OH (2002)

Invited Lectureships (a short selection)

- (Keynote) "Electrochemical and Biological Response of Advanced Titanium Alloys in Physiologically-Relevant Environments," 21st International Corrosion Congress (ICC), July 20-23, 2021
- (Invited) "Advanced Titanium Alloys - Effects of Processing, Alloy Composition and Solution Acidity On Biocorrosion And Biocompatibility," Research In Progress Symposium on Biomedical Materials, CORROSION 2021 (Virtual Conference) - April 19 - 30, 2021
- (Invited) "Engineered Coatings Using Pack Cementation Processes," IIT Bombay, Mumbai, India – December 19, 2020
- (Invited) "Alloy Design, Corrosion and Biocompatibility Studies of Candidate Implant Alloys," IIT Madras, Chennai, India – January 5, 2020
- (Invited) "Biocorrosion and Biocompatibility of Advanced Titanium Alloys," Symposium on "New Generation Biomaterials," MS&T 2019, Portland, OR – September 28, 2019
- (Presidential Address, Plenary) "Adventures in the Amazing World of Materials," AAAS-Pacific Division Annual Meeting, June 13th, 2018

Honors

- Invitee, 2007 Japan-America Frontiers of Engineering (USJAFOE) Symposium, National Academy of Engineering (NAE, USA), Japan Science and Technology Agency, Engineering Academy of Japan, HP Labs, Palo Alto, CA (November 5-7, 2007)
- Invitee, 2006 National Academies Keck Futures Initiative: Smart Prosthetics Conference: Exploring Assistive Devices for the Body and Mind, The National Academies, Irvine, California, (November 9-11, 2006)
- Invitee, 2003 U.S. Frontiers of Engineering (USFOE) Symposium, National Academy of Engineering, Irvine, CA (September 18 – 20, 2003)
- ASM-IIM Lecturer, ASM International-Indian Institute of Metals (2004 & 1999)

9. **Major Career Contributions and Legacy**

- Invention and development of coated graphite materials and products for many applications
- Invention of unique ceramic and metal matrix composite systems for different applications
- Inventions in the areas of thermoelectric devices for space power applications
- Innovations in corrosion testing of metals in a broad range of environments
- Established structure-processing-property relationships in the field of expanded poly(tetrafluoroethylene) that contributed to process and product development
- Growth of department through creation of new programs, strengthening and expansion of current programs, and hiring/mentoring faculty
- Teaching and mentoring of thousands of students, many from underrepresented groups and first-generation college-goers, thereby expanding opportunities for them.