

Curriculum Vitae
M. Parans Paranthaman, Ph.D.
Oak Ridge National Laboratory

Corporate Fellow/UT-Battelle Distinguished Inventor
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Education/Training

<u>Institution and Location</u>	<u>Degree</u>	<u>Year(s)</u>	<u>Field of Study</u>
Madurai Kamaraj University, Madurai, India	B.Sc.	1980	Chemistry
Madurai Kamaraj University, Madurai, India	M.Sc.	1982	Chemistry
Indian Institute of Technology, Madras	Ph.D.	1988	Solid state chemistry and Materials science

Research and Professional Experience

- 2017-Present: Corporate Fellow, Chemical Sciences Division, Oak Ridge National Laboratory, Oak Ridge, Tennessee
- 2021-Present: Oak Ridge Graduate Advisor, The Bredesen Center, The University of Tennessee, Knoxville
- 2010-2020: Professor, The University of Tennessee, Knoxville, Bredesen Center for Interdisciplinary Research and Graduate Education Faculty
- 2006-2020: Distinguished Research Staff and Group Leader, Materials Chemistry Group, Chemical Sciences Division, Oak Ridge National Laboratory, Oak Ridge, Tennessee
- 1999-2005: Senior Research Staff, Chemical Sciences Division, Oak Ridge National Laboratory, Oak Ridge, Tennessee
- 1995-1999: Research Staff, Chemistry Division, Oak Ridge National Laboratory, Oak Ridge, Tennessee
- 1993-1994: Post-doctoral Fellow, Chemistry Division, Oak Ridge National Laboratory, Oak Ridge, Tennessee
- 1991-1993: Research Associate, Superconductivity Laboratories, Department of Physics, University of Colorado, Boulder (worked with **Professor Allen M. Hermann**)
- 1988-1991: Post-doctoral Fellow, Center for Materials Science and Engineering, The University of Texas at Austin (worked with Nobel Prize Winner **Professor John B. Goodenough**)
- 1982-1988: Research Fellow, Materials Science Research Center, Indian Institute of Technology, Madras, India (Ph.D. Thesis Advisor: **Professors G. V. Subba Rao and G. Aravamudan**)
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Editorial Boards – Journals

Editor, Journal of Alloys & Compounds (2023-Present)

Editorial Board Member, Nature Scientific Reports (2023-Present)
Research Insights Editorial Board of the ORNL Review Magazine (2022-Present)
Associate Editor, Journal of the American Ceramic Society (2004-Present)
Chair, ORNL Credential Committee for approving new UTK Bredesen/ ORII Center Faculty (2020-Present)
Editorial Board, Applied Sciences (2017-2019)
Editorial Board, MRS Advances (2016-2018)
Co-editor, MRS Advances, MRS Spring 2016 Meeting Proceedings, March 2016
Key Reader: Metallurgical and Materials Transactions E: Materials for Energy Systems (2014-2018)
International Editorial Board, European Superconductivity News Forum (2012-Present)
Editorial Board, Advances in Materials Research (2011-Present)
Editorial Board, The Open Applied Physics Journal (2008-Present)
Editorial Board, Superconductor Science and Technology (2003-2009)
Technical Editor, Materials Branch, IEEE Trans. on Applied Superconductivity, Applied Superconductivity Conference, Chicago, Illinois, August 2008
Guest Editor, Special Issue on "Superconducting Wires and Tapes," Journal of Electronic Materials, October 2007
Technical Editor, Materials Branch, IEEE Trans. on Applied Superconductivity, Applied Superconductivity Conference, Seattle, Washington, August 2006
Guest Editor, Special Issue on "High performance YBCO coated conductors," MRS Bulletin, August 2004
Technical Editor, Materials, IEEE Trans. on Applied Superconductivity, Applied Superconductivity Conference, Jacksonville, Florida, October 2004
Technical Editor, Materials Branch, IEEE Trans. on Applied Superconductivity, Applied Superconductivity Conference, Houston, Texas, August 2002

Editor – Books

Co-Editor, Book on "Semiconductor Materials for Solar Photovoltaic Cells," Springer, 2015
Co-Editor, Book on "Advances in Materials Science for Environmental and Energy Technologies II," *Ceramic Transactions*, Volume 241, John Wiley & Sons, Inc., 2013
Co-Editor, Book on "High Temperature Superconductors," Wiley-VCH, 2010
Co-Editor, Book on "Flux Pinning and AC Loss Studies on YBCO Coated Conductors," Nova Science Publishers, 2007
Co-Editor, Book on "High-Temperature Superconductor Materials, Devices, and Applications," *Ceramic Transactions*, Volume 160, The American Ceramic Society, Ohio, 2004
Co-Editor, Book on "Materials for High-Temperature Superconductor Technologies," Materials Research Society, 2002

Professional Activities

- Fellow: National Academy of Inventors (NAI) (2018)
- Fellow: American Physical Society (APS) (2018)
- Fellow: UT-Battelle/ORNL Corporate Fellow (2017)
- Fellow: Materials Research Society (MRS) Fellow (2017)
- Fellow: American Association for the Advancement of Science (AAAS) (2016)
- Fellow: The American Ceramic Society (2015)
- Fellow: ASM International, The Materials Information Society (2014)
- Fellow: Institute of Physics, London, UK (2004)
- Member: TMS, 2015-present
- Member: American Chemical Society, 2009-present
- Member: Electrochemical Society, 2009-present

- Senior Member: IEEE Magnetics Society, 2023-present

Conferences/Workshops Organized

- Co-Organizer 2020 TMS Annual Meeting & Exhibition, Symposium: Recent Advances in Functional Materials and 2D/3D Processing for Sensors and Electronic Applications; Organizer(s): Pooran Joshi; Ravindra Nuggehalli; Anming Hu; Tolga Aytug; Konstantinos Sierros; Mariappan Paranthaman; Sponsor(s): TMS: Thin Films and Interfaces Committee.
- Organizer, Symposium on Lithium-Ion and Sodium-Ion Batteries, 2016 MRS Spring Meeting, Phoenix, Arizona, March 28-April 1, 2016.
- Technical Chair, DOE Workshop on Materials Innovation for Next Generation R&D Grid Components,, Oak Ridge, TN, August 26-27, 2015
- Co-organized a symposium based on Energy Conversion – Photovoltaic, Concentrating Solar Power, and Thermoelectrics in the Materials Science and Technology Conference in Pittsburgh, PA, October 8-12, 2012.
- Co-organized the High Temperature Superconductivity symposium in the Materials Science and Technology Conference in Houston, Texas, October 17-21, 2010.
- Organizer, Perovskite Oxides: Films, Nanostructures, Properties, and Applications Symposium for the Material Science & Technology 2008 (MS&T'08) Conference and Exposition, October 5-9, 2008, in Pittsburgh, Pennsylvania.
- Organizer, High Temperature Superconductivity symposium for the Material Science & Technology 2007 (MS&T'07) Conference and Exposition, September 16-20, 2007 in Detroit, Michigan.
- Organizer, High Temperature Superconductor Wires & Tapes symposium for the Material Science & Technology 2006 (MS&T'06) Conference and Exposition, October 15-18, 2006 in Cincinnati, Ohio.
- Organizer, High temperature superconductor materials, devices and applications symposium in 106th Annual Meeting & Exposition of the American Ceramic Society, April 2004.
- Organizer, High temperature superconductivity symposium in 2001 Fall MRS meeting, December 2001, Boston, MA
- Co-organizer, International Workshop on Coated Conductors for Applications, Italy, September 2003
- Chair, MRS International Workshop on Superconductors and Applications in Gatlinburg, Tennessee, August 2002
- Chair, 2007 DOE Wire Development Workshop in Panama City, Florida, January 2007
- Chair, 2005 DOE Wire Development Workshop in St. Petersburg, Florida, January 2005
- Chair, 2003 DOE Wire Development Workshop in St. Petersburg, Florida, January 2003

Review Panels

- Nominated as Chair, ORNL Corporate Fellow Council (2021-Present)
- Nominated to Chair the ORNL strategic hire ad hoc committee
- Nominated by the Lab Director's Office to participate as a participant in ORNL Students Program Review Committee
- Nominated by the Lab Director's office to participate in the Research Insights Editorial Board of the ORNL Review Magazine
- Chair, ORNL Credential Committee for approving new UTK Bredesen/ ORII Center Faculty
- Participate in student interview committee for UT/ORII graduate students
- Participated as a judge for DOE NREL geothermal lithium prize competition 2022 – attended Li bridge DOE meeting.
- Member, Deputy Director for Science and Technology Search Committee, 2021
- ORNL Innovation Crossroads Committee Member (2019-Present)
- Committee Member, National Academy of Inventors (NAI) (2018-Present)
- Chair, Bredesen Center Faculty Credentials Committee, Univ. of Tenn., Knoxville (2017-Present)
- Co-chair, ORNL Corporate Fellow Committee (2018-Present)

- Member, Bredesen Center Director Search Committee, Univ. of Tenn., Knoxville (2018)
- ORNL Distinguished Fellows Review Committee Member (2017-2018)
- ORNL Postdoc Group Mentor (2017)
- Reviewer Advanced Light Source User Proposals, Lawrence Berkeley National Laboratory, CA, 2013-Present
- Reviewer DOE SBIR and BES Early Career Proposals, 2009-Present
- Reviewed Hundreds of Journal Articles that were published in several international journals
- Member by invitation on the panel of judges for Department of Energy's university project, and Industry peer reviews, 1999, 2000, 2004
- Member by invitation on the panel of reviewers for various DOE SBIR-STTR, Air Force, and DARPA Programs, 1996-Present

Awards and Honors

- 2024 Won ninth **R&D 100 Award** – Direct lithium extraction sorbents
- 2023 IIT Madras, India Distinguished Alumnus Award
- 2023 ORNL Technology Innovation Award
- 2023 IEEE Senior Membership Award
- 2022 ORNL Technology Innovation Award
- 2021 ORNL Technology Innovation Award
- 2021 Silver Medal for eighth **R&D 100 Award** - Securing Domestic Production of Respirator Masks During COVID-19
- 2021 **FLC Impact Award** – Part of the team at ORNL and Partners Help Address Urgent Need for N95 Masks to Protect COVID-19 Responders
- 2020 ORNL Director's Award: Mission Critical Team Award
- 2020 ORNL Technology Transfer Award, Awards Night
- 2020 ORNL Technology Innovation Award
- 2019 ORNL Director's Award: **Top Scientist** of the Year Award
- 2019 **Mentor of the Year** at ORNL, Awards Night
- 2019 ORNL Technology Commercialization Award
- 2019 TechConnect Innovation Award, Boston MA
- 2019 Cited in Frontiers of Materials Research (National Academy of Sciences Report)
- 2018 Fellow of National Academy of Inventors (NAI)
- 2018 Fellow of American Physical Society (APS)
- 2017 UT-Battelle **Corporate Fellow**
- 2017 **Fellow** of Materials Research Society (MRS)
- 2017 ORNL **Technology Commercialization** Award
- 2017 Battelle Celebration of Solvers Award, Columbus OH
- 2017 **Seventh R&D 100 Award** Winner: Additive Manufacturing of Magnets
- 2016 Cited in The Economist Article – Magnetic Moments (Additive Manufacturing)
- 2016 UT-Battelle **Inventor of the Year**
- 2016 ORNL **Technology Commercialization** Award
- 2016 Sixth **R&D 100 Award**: Waste-tire derived carbon for lithium ion batteries
- 2016 Scholar of the week, The University of Tennessee, Knoxville
- 2015 **Fellow** of the American Association for the Advancement of Science (AAAS)
- 2015 Fifth **R&D100 Award**: Multifunctional Superhydrophobic Transparent Glass Coating. Finalist in two Categories (Mechanical Devices/Materials and Market Disruptor Product).
- 2015 **Fellow** of the American Ceramic Society
- 2015 ORNL **Technology Commercialization** Award

- 2014 **Fellow** of the ASM International
- 2014 ORNL **Technology Commercialization** Award
- 2014 The American Ceramic Society: Ceramographic Competition Award: First Place: Scanning Probe Microscopy Category
- 2014 Parans Paranthaman's journal article was featured on Superconductor Science and Technology journal Cover page during February 2014; Volume 27; 022002 (6pp).
- 2013 Parans has contributed a book chapter in InTech's book on "Applications of High-Tc Superconductivity" that has been accessed/downloaded more than 3000 times.
- 2012 Fourth **R&D 100** Award related GaN Based Power Electronics
- 2011 ORNL Partnership Award
- 2011 FLC National Award: Excellence in Technology Transfer
- 2010 FLC Southeast Regional Award: Excellence in Technology Transfer Award
- 2010 Third **R&D 100** Award for developing "High Performance, High-Tc Superconducting Wires enabled via Self-assembly of Non-superconducting Columnar Defects"
- 2010 Co-authored top cited Physica C article in the last 5 years (2005-2010)
- 2009 **Ranks # 2 in worldwide citations in the HTS research during the last decade** (1999-2009)
- 2008 Second National FLC Award for Excellence in Technology Transfer.
- 2008 Co-authored three highly cited papers in the area of superconductivity since 2003 in PRL, PRB, JAP, APL, and SuST journals
- 2009 Ranks # 2 in worldwide citations in the HTS research during the last decade (1999-2009)
- 2008 **National FLC Award** for Excellence in Technology Transfer.
- 2008 ORNL Key Contributor Award Recipient
- 2007 Second **R&D 100** Award for 2007 for Developing High-performance LMO-enabled High-Temperature Superconducting Tape
- 2007 FLC Southeast Regional Award; Excellence in Technology Transfer Award for developing High-performance LaMnO₃ Enabled, High-Temperature Superconducting Tape
- 2007 DOE Excellent Mentor Award
- 2007 DOE Superconductivity Program Annual Peer Review, "Received top ranking with unprecedented high score of 98.4 out of 100 points" – ORNL-SuperPower CRADA
- 2007 R&D Significant Technical Accomplishment Award, Oak Ridge National Laboratory
- 2007 Patent Royalty Award for patents issued and licensed
- 2006 **Nova 50 Award** for Technical Accomplishments
- 2006 Excellent Team Award for Technology Transfer to Industries, Awards Night, ORNL
- 2006 DOE Excellent Mentor Award
- 2005 Patent Royalty Award for patents issued and licensed
- 2005 Authored highly cited paper in Appl. Phys. Lett. Since 2000
- 2005 DOE Excellent Mentor Award
- 2004 **Fellow** of the Institute of Physics, London, UK
- 2004 Patent Royalty Award for patents licensed
- 2003 Selected as one of 11 "**Distinguished Inventors**" at Oak Ridge National Laboratory by the Battelle Memorial Institute, Columbus, Ohio
- 2003 DOE Superconductivity Program Annual Review, "**Exceptional Accomplishment Award**" – ORNL-AMSC CRADA: Development of 2G YBCO RABiTS Wires.
- 2000 Patent Royalty Awards for patents and technology transfer
- 2003 **Authored two highly cited papers in Physica C journal since 1995**
- 2003 **Authored highly cited paper in Superconductor Science and Technology journal**
- 2003 Patent Royalty Awards for patents licensed

- 2001 Federal Laboratory Consortium (FLC) Award for Excellence in Technology Transfer
- 2001 **Energy-100** award for co-developing the RABiTS Technology 1999 **R&D 100** Award for co-developing the RABiTS Technology
- 1999 R&D *Sustained* Development Accomplishment Award, Oak Ridge National Laboratory
- 1999 American Museum of Science & Energy (AMSE)'s "Tribute to Tennessee Technology" Award
- 1999 **World-Class Teamwork Award**, Oak Ridge National Laboratory
- 1998 Lockheed Martin Energy Research Corp.- Tech. Transfer Award for Technical Support
- 1997 **Lockheed-Martin NOVA** Award for technical achievement
- 1997 **Lockheed Martin Scientist of the Year** Award
- 1997 R&D Significant Technical Accomplishment Award, Oak Ridge National Laboratory
- 1997 Lockheed Martin Energy Research Corp.- Tech. Transfer Award for Technical Support
- 1996 Lockheed Martin Energy Research Corp. - Tech. Transfer Award for Technical Support
- 1996 Department of Energy's (DOE), Office of Science, Materials Science Award for technical achievement
In Solid State Physics
- 1988-1991 Robert A. Welch Fellowship for Postdoctoral Research, Univ. of Texas at Austin

Graduate and Postdoctoral Advisors

- Ph.D. (1982-1988) with Prof. G.V. Subba Rao (IIT, Madras);
Postdoc (1988-1991) with Prof. John B. Goodenough (Nobel Prize Winner for Chemistry 2019) (UT, Austin);
Research Associate (1991-1993) with Prof. Allen M. Hermann (Univ. Colorado, Boulder).

Student Supervision Experience

- Thesis Advisor and Postgraduate-Scholar Sponsor:** I have co-advised several thesis projects of
8 Ph.D. students (through University of Tennessee, Knoxville and University of Houston)
2 M.S. students (through Tenn. Tech. Univ.)
>80 Undergraduate students; 5 College teachers; 35 High school teachers, and >20 postdoctoral scholars

Present Post Docs (1):

Jayanthi Kumar

Present Graduate Students (1)

Saurabh Prakash Pethe

Teaching Experience

Has delivered over 100 lectures, keynote speeches, workshop presentations, and invited talks.
Has taught graduate level classes at the University of Tennessee, Knoxville

Collaborators from other Institutions (past 60 months)

Vilas Pol, John Sutherland, Fu Zhao, Purdue University
Alex Macdonald, Rio Tinto
Yury Gogotsi, Drexel University
Stephen Harrison, Simbol Materials
Rich Lee, RJLee Group
John Ormerod, Robert Fredette, Magnet Applications Inc.
Scott McCall, Lawrence Livermore National Laboratory
Tom Lograsso, Ikenna Nlebedim, Ames Laboratory
Frank Johnson, GE/Niron
Zaffir Chaudhury, UTRC
David Mandrus, University of Tennessee

W. Wong-Ng, L. P. Cook, NIST, Gaithersburg
D. P. Norton, University of Florida
J. Z. Wu, University of Kansas
Dean Miller, V. Maroni, Argonne National Laboratory
V. Selvamanickam, University of Houston
M. W. Rupich, S. Sathyamurthy, C. Thieme, X. Li, American Superconductor Corporation
Y. Chen, SuperPower
D. Larbalestier, E. Hellstrom, Florida State University
Zhengwei Pan, University of Georgia
Q. Xia, Los Alamos National Laboratory
A. Manthiram, J.B. Goodenough, The University of Texas at Austin
A. Manivannan, National Energy Technology Laboratory
Raghu Bhattacharya, C. Teplin, H. Branz, National Renewable Energy Laboratory.
Thomas Fanning, Jon Bornstein, Steve Hane, Ampulse

List of Publications of Parans Paranthaman

I. Summary of Paranthaman's Publications

Journal Publications: **>479**

Web of Science Total Citations **17,233**; h-index: **68**

Google Scholar Total Citations **25,058**; h-index: **78**

Total Number of Inventions: **>106**

U.S. Patents Issued: **62**

Patent Applications Published: **>29**

Invention Disclosures Submitted/Elected to File/Patent Applications Filed: **>15**

Books co-edited: **7**

Book Chapters/Conference Proceedings: **59**

Invited Presentations: **> 100 (since 2010)**

II. Selected List of Journal Publications (Total of > 479)

1. H. Parmar, X. Liu, K. Gandha, M. P. Paranthaman, and I. C. Nlebedim, "Effects of Magnetic Field Annealing on the Hard Magnetic Properties of Milled Nd-Fe-B Powders," *J. Magn. & Magn. Mater.*, 587, 171328 (2023). DOI: 10.1016/j.jmmm.2023.171328
2. P. Wagh, S. Z. Islam, T. N. Lamichhane, R. Bhave, and M. P. Paranthaman, "Separation of lithium from aluminum-containing clay mineral leachate solution using energy-efficient membrane solvent extraction," *ACS Omega*, 8 (49), pp.46523-46527 (2023). DOI: 10.1021/acsomega.3c05009
3. ACS Omega Journal Cover page: P. Wagh, S. Z. Islam, T. N. Lamichhane, R. Bhave, and M. P. Paranthaman, "Separation of lithium from aluminum-containing clay mineral leachate solution using energy-efficient membrane solvent extraction," *ACS Omega*, 8 (49), pp.46523-46527 (2023). DOI:10.1021/acsomega.3c05009
4. K. Jayanthi, M. P. Paranthaman, B. J. Manard, and A. Navrotsky, "Effect of Anions on the Delithiation of [Li-Al] Layered Double Hydroxides: Thermodynamic Insights," *J Phys Chem C*, 127 (49), pp.23879-23886 (2023). DOI: 10.1021/acs.jpcc.3c05676
5. K. Jayanthi, T. N. Lamichhane, V. Roy, F. Zhao, A. Navrotsky, B. A. Moyer, and M. P. Paranthaman, "An Integrated Circular Economy Model System for Direct Lithium Extraction: From Minerals to Batteries Utilizing Aluminum Hydroxide," *ACS Appl. Mater. & Interfaces*, 15 (50), pp.58984-58993 (2023). DOI: 10.1021/acsomega.3c12070

6. T. Wang, H. Luo, Y. Bai, I. Belharouak, K. Jayanthi, M. P. Paranthaman, E. T-H. Wang, F. Dogan, S-B. Son, B. J. Ingram, Q. Dai, and S. Dai, "Direct Recycling of Spent Nickel-Rich Cathodes in Reciprocal Ternary Molten Salts," *J. Power Sources*, 593 (2023). DOI: 10.1016/j.jpowsour.2023.233798
7. H. Parmar, M. P. Paranthaman, and I. C. Nlebedim, "Bi-modal particle size distribution for high energy product hybrid Nd-Fe-B-Sm-Fe-N bonded magnets", *AIP Advances*, 14 (1), 015329 (2024). DOI: 10.1063/9.0000819
8. H. Jiang, D. Graham, A. Hollander, M. P. Paranthaman, M. Muneeshwaran, X. Liu, M. Theodore, T. Aytug, K. An, K. Li, and K. Nawaz, "Quaternary Ammonium Salt Coated Air Filter for Bioaerosol Removal from Building Indoor Air," *Building and Environment*, 250, 111158 (2024). DOI: 10.1016/j.buildenv.2023.111158
9. A. Patel, S. Mallick, J. H. Mugumya, N. L-Riviera, S. Kim, M. Jiang, M. P. Paranthaman, M. L. Rasche, H. Lopez, and R. B. Gupta, "Slug flow synthesis of NCMA: Effect of substitution of cobalt with aluminum on the electrochemical performance of Ni-rich cathode for lithium-ion battery," *Materials Today Energy*, 101545 (2023). DOI: 10.1016/j.mtener.2024.101545
10. M. Mou, A. Patel, S. Mallick, B. P. Thapaliya, M. P. Paranthaman, J. Mugumya, M. L. Rasche, R. B. Gupta, S. Saleh, S. Kothe, E. Baral, G. P. Pandey, H. Lopez, M. Jiang, "Scalable Advanced $\text{Li}(\text{Ni}_{0.8}\text{Co}_{0.1}\text{Mn}_{0.1})\text{O}_2$ Cathode Materials from a Slug Flow Continuous Process," *ACS Omega* 7 (46), 42408-42417 (2022). DOI 10.1021/acsomega.2c05521
11. K. Gandha, M. P. Paranthaman, H. Wang, X. Liu, and I. C. Nlebedim, "Thermal Stability of Anisotropic Bonded Magnets Prepared by Additive Manufacturing," *J Amer Ceram Soc* 106 (1), 166-171 (2023). DOI 10.1111/jace.18609
12. S. Mallick, A. Patel, X. G. Sun, M. P. Paranthaman, M. Y. Mou, J. H. Mugumya, M. Jiang, M. L. Rasche, H. Lopez, R. B. Gupta, "Low-cobalt active cathode materials for high-performance lithium-ion batteries: synthesis and performance enhancement methods," *J. Mater. Chem. A* 11 (8), 3789-3821 (2023). DOI 10.1039/d2ta08251a
13. N. Khosla, J. Narayan, X-G. Sun, M. P. Paranthaman, "Surface modification of graphite anodes by laser annealing and improvement of cyclability for lithium-ion batteries," *Carbon* 205, 214-225 (2023). DOI 10.1016/j.carbon.2023.01.009
14. N. Khosla, J. Narayan, X-G. Sun, M. P. Paranthaman, "Nanosecond laser structuring of NMC811 cathode materials for enhanced performance," *J. Electrochem. Soc.* 170 (3) 030520 (2023) DOI 10.1149/1945-7111/acc27d
15. M. Y. Mou, A. Patel, S. Mallick, K. Jayanthi, X. G. Sun, M. P. Paranthaman, S. Kothe, E. Baral, S. Saleh, J. H. Mugumya, M. L. Rasche, R. B. Gupta, H. Lopez, and M. Jiang, "Slug Flow Coprecipitation Synthesis of Uniformly-Sized Oxalate Precursor Microparticles for Improved Reproducibility and Tap Density of $\text{Li}(\text{Ni}_{0.8}\text{Co}_{0.1}\text{Mn}_{0.1})\text{O}_2$ Cathode Materials, *ACS Appl. Energy Mater.* 6 (6), 3213-3224 (2023). DOI 10.1021/acsaem.2c03563
16. S. Kulkarni, F. Zhao, I. C. Nlebedim, R. Fredette, M. P. Paranthaman, "Comparative Life Cycle Assessment of Injection Molded and Big Area Additive Manufactured NdFeB Bonded Permanent Magnets," *J. Manufac. Sci. and Engg. – Trans. Of the ASME* 145(5), 051001 (2023). DOI 10.1115/1.4056489

17. M. L. Whittaker, E. Crumlin, W. Dong, K. Li, T. Aytug, H. M. Meyer III, S. F. Evans, B. A. Moyer, M. P. Paranthaman, "Cooperative lithium sorption in layered double hydroxides is modulated by colloidal assembly," *Chem. of Mater.* 35 (10), 3931-3940 (2023). DOI 10.1021/acs.chemmater.3c00072
18. H. Wang, A. M. Elliott, M. P. Paranthaman, "Sintering-Based Metal Additive Manufacturing Methods for Magnetic Materials," Published as a book chapter for the book titled, "Solid-State Metal Additive Manufacturing: Processes, Mechanical Properties, and Applications" Edited by Hang Z. Yu, Nihan Tuncer, Zhili Feng (ISBN: 9783527350933), Published by Wiley-VCH GmbH (2023).
19. X. B. Liu, K. Gandha, H. Wang, K. Mungale, U. K. Vaidya, I. C. Nlebedim, and M. P. Paranthaman, "Packing bimodal magnetic particles to fabricate highly dense anisotropic rare earth bonded permanent magnets," *RSC Advances* 13 (25), 17097-17101 (2023). DOI 10.1039/d3ra02349d
20. P.B. Anleu, Y. Le Pape, Q. Y. Chen, R. Advincula, X. G. Sun, J. B. Felder, H. M. Meyer, B. K. Post, M. J. Lance, and M. P. Paranthaman, "An innovative carbonated cementitious material and its printability and carbon mineralization capacity," *Progress in Additive Manufacturing*, pp. 1-10 (2023). DOI 10.1007/s40964-023-00463-2
21. B. P. Thapaliya, T. Wang, A. Y. Borisevich, H. M. Meyer III, X. G. Sun, M. P. Paranthaman, C. A. Bridges, and S. Dai, "In Situ Ion-Exchange Metathesis Induced Conformal LiF Surface Films on Cathode (NMC811) as a Cathode Electrolyte Interphase," *Adv. Func. Mater.* (2023). DOI 10.1002/adfm.202302443
22. V. Rallabandi, S. Chowdhury, H. Barua, M. P. Paranthaman, M. Mohammad, S. Bullock, and E. Cousineau, "Traction motor design trade-offs with additively manufactured anisotropic bonded magnets," *IEEE Transportation Electrification Conference & Expo (ITEC)*, 1-5 (2023). 979-8-3503-9742-0/23/\$31.00 ©2023 IEEE
23. X. Zhou, M. P. Paranthaman, and J. W. Sutherland, "Comparative techno-economic assessment of NdFeB bonded magnet production: injection molding (IM) versus big area additive manufacturing (BAAM), *ACS Sustainable Chem. & Engg.* (2023). DOI: 10.1021/acssuschemeng.3c01942
24. Abhishek Sarkar, M. Parans Paranthaman, and Ikenna C. Nlebedim, "*In-situ* magnetic alignment model for additive manufacturing of anisotropic bonded magnets," *Additive Manufacturing* 46, 102096, 2021. <https://doi.org/10.1016/j.addma.2021.102096>
25. Neil R. Taylor, Mihee Ji, Praneeth Kandlakunta, Lei Pan, Ivan Kravchenko, Pooran Joshi, Tolga Aytug, M. Parans Paranthaman, Lei R. Cao, Large Area Vertical Ga₂O₃ Schottky Diodes for X-Ray Detection, *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, 1013, 165664, 2021. <https://doi.org/10.1016/j.nima.2021.165664>
26. Kinjal Gandha, Ikenna C. Nlebedim, M. Parans Paranthaman, et al., 3D printing of anisotropic Sm-Fe-N bonded permanent magnets, *Engineering Reports*, e12478, 2021. <https://doi.org/10.1002/eng2.12478>
27. Kinjal Gandha, Ikenna C. Nlebedim, M. Parans Paranthaman, et al., Front Cover Image, *Engineering Reports*, Volume 3, Number 12, December 2021 e12488, 2021. <https://doi.org/10.1002/eng2.12488>
28. K. Jayanthi, G. Neilsen, P. F. Rosen, C. I. Anderson, M. S. Dickson, S. F. Evans, M. P. Paranthaman, B. F. Woodfield, and A. Navrotsky, "Thermodynamic analysis of lithium aluminum layered double hydroxides (LDHs) with intercalated chloride, *American Mineralogist*, 107 (4) 709-715 (2022). <https://doi.org/10.2138/am-2021-7935>

29. Jun Cui, John Ormerod, David Parker, Ryan Ott, Andriy Palsuyk, Scott Mccall, M. Parans Paranthaman, Michael Kesler, Michael McGuire, Jesús R. Pérez-Cardona, John Sutherland, Cajetan Nlebedim, Chaochao Pan, Thomas Lograsso, "Manufacturing Processes for Permanent Magnets" Part I, JOM 74 (4) 1279–1295 (2022). <https://doi.org/10.1007/s11837-022-05156-9> 2022
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 42. Goyal, A.; Norton, D.P.; **Paranthaman, M.P.**; Specht, E.D.; He, Q.; List, F.A.; Kroeger, D.M.; Christen, D.K.; Budai, J.D. Low Cost, Single Crystal-like Substrates for Practical, High Efficiency Solar Cells, *Proc. of the Future Generation Photovoltaics Technologies Conference*, Denver, CO, March 24-28, 1997.
 43. J.R. Thompson, D.K. Christen, **M. Paranthaman**, L. Krusin-Elbaum, A.D. Marwick, L. Civale, R. Wheeler, J.G. Ossandon, P. Lisowski, and J. Ullmann, The Impact of Tailored Defects on Length Scales and Current Conduction in High-T_c Superconductors, in *Lecture Notes in Physics*, edited by P. Klamut, J. Klamut, B. Veel, and B. Dabrowski, Springer-Verlag Publishers, Heidelberg, Germany, **1996**.
 44. Maya, L.; **Paranthaman, M.P.**; Thundat, T.; Allen, W.R.; Glover, A.L.; Mabon, J.C. Gold Nanocomposites Prepared by Reactive Sputtering, *Mater. Res. Soc. Symp. Proc.* **1996**, 405, 529-534.
 45. **Paranthaman, M.P.**; Goyal, A.; Norton, D.P.; List, F.A.; Specht, E.D.; Christen, D.K.; Kroeger, D.M.; Budai, J.D.; He, Q.; Saffian, B.; Lee, D.F.; Martin, P.M. Development of Biaxially Textured Buffer Layers on Rolled-Ni Substrates for High Current YBa₂Cu₃O_{7-y} Coated Conductors, *Advances in Superconductivity IX*, Springer Publishers, S. Nakajima, and M. Murakami (Eds.), Vol. 2, 669-672, 1997, *Proc. of the 9th International Symposium on Superconductivity (ISS '96)* Sapporo, Japan, October 21-24, 1996.

46. Goyal, A.; Norton, D.P.; **Paranthaman, M.P.**; Budai, J.D.; Specht, E.D.; Christen, D.K.; Kroeger, D.M.; He, Q.; Saffian, B.; List, F.A.; Lee, D.F.; Klabunde, C.E.; Martin, P.M. Fabrication of High Critical Current Density Superconducting Tapes by Epitaxial Deposition of YBCO Thick Films on Biaxially Textured Metal Substrates, *Advances in Superconductivity IX*, Springer Publishers, S. Nakajima, and M. Murakami (Eds.), Vol. 2, pp. 685-688, 1997, Proc. of the 9th International Symposium on Superconductivity (ISS '96) Sapporo, Japan, October 21-24, 1996.
47. Shoup, S.S.; **Paranthaman, M.P.**; Beach, D.B.; Specht, E.D. Growth of Epitaxial LaAlO₃ and CeO₂ Films Using Sol-Gel Precursors, Proc. of the 10th Anniversary High-Temperature Superconductivity Workshop, Houston, TX, Edited by B. Batlogg, C.W. Chu, W.K. Chu, D.U. Gubser, and K.A. Muller, pp. 134-135, March 12-16, 1996.
48. Christen, D.K.; He, Q.; **Paranthaman, M.P.**; Klabunde, C.E.; Feenstra, R.; Goyal, A.; List, F.A.; Kroeger, D.M.; Tkaczyk, J.E.; DeLuca, J.A.; Ren, Z.F.; Wang, J.H. Superconducting Transport Properties of Tl-1223 Deposits on Polycrystalline Substrates, Proc. of the 1995 International Workshop on Superconductivity, Maui, Hawaii, 383-384, June 18-21, 1995.
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50. Christen, D.K.; He, Q.; **Paranthaman, M.P.**; Klabunde, C.E.; Specht, E.D.; Feenstra, R.; Goyal, A.; List, F.A.; Kroeger, D.M.; Tkaczyk, J.E.; DeLuca, J.A.; Ren, Z.F.; Wang, C.A.; Wang, J.H. Transport Properties of Tl1223 Deposits for Possible Conductor Applications, Proc. of the 7th US-Japan Workshop on High-Tc Superconductors, October 24-25 1995.
51. **M. Paranthaman** and A. M. Hermann, Thallium Based High-T_c Superconducting Oxides - A Summary. In *Organic Conductors: Fundamentals and Applications*, Jean-Pierre Farges ed., 735-737 (Marcel Dekker, Inc., New York, 1994).
52. Hermann, M.; Naziripour, A.; Duan, H.M.; Yandrofski, R.M.; Tello, R.; **Paranthaman, M.P.**; Price, J.; Galt, D. Synthesis and Characterization of Superconducting Thallium Cuprate Thin Films. Proc. of the 183rd Electrochemical Society Meeting, Honolulu, Hawaii, (May 1993).
53. **M. Paranthaman**, A. Manthiram and J. B. Goodenough, Chemical Characterization of Thallium-Cuprate Superconductors. In *Thallium-Based High Temperature Superconductors*, A.M. Hermann and J.V. Yakhmi eds., 147-175 (Marcel Dekker, Inc., New York, 1993).
54. **M. Paranthaman**, H. M. Duan and A. M. Hermann, Single Crystal Growth and Characterization of Thallium-Cuprate Superconductors - A Review. In *Thallium-Based High Temperature Superconductors*, A.M. Hermann and J.V. Yakhmi eds., 177-194 (Marcel Dekker, Inc., New York, 1993).
55. **M. Paranthaman**, W. Kiehl and A. M. Hermann, Synthesis and Characterization of Tl₂Ba₂CuO₆ Systems - A Review. In *Studies of High Temperature Superconductors*, A. V. Narlikar ed., Vol. 11, 353-381 (Nova Science Publishers, Inc., New York, 1993).
56. **Paranthaman, M.P.**; Manthiram, A.; Goodenough, J.B. Chemical Characterization of Thallium Cuprate Superconductors. Proc. of the ICMC '90 Topical Conference. High-Temperature Superconductors. Materials Aspects. Garmisch-Partenkirchen, FRG (May 1990).
57. Manoharan, R.; **Paranthaman, M.P.**; Goodenough, J.B. Electrocatalysis on Sr_{1-x}NbO_{3-d} (0.05 ≤ x ≤ 0.3). Proc. of the 176th Electrochemical Society Meeting, Hollywood, Florida (1989).
58. Rao, G.V.S.; Varadaraju, U.V.; **Paranthaman, M.P.**; Sankaranarayanan, V.; Ravindran, R.; Srinivasan, R. Superconductivity Studies on Tl-Ba-Ca-Cu-O System. Proc. of the 1st Asia-Pacific Conference on Condensed Matter Physics (World Scientific, Singapore) p.305 (1989).
59. Rao, G.V.S.; Aruchamy, A.; Aravamudan, G.; **Paranthaman, M.P.** Studies on Photoelectrochemical Behavior of Certain Oxide Materials for Photoassisted Electrolysis of Water. *Adv. Hyd. Energy*, 4 (Hydrogen Energy Progress V, Vol. 3), T.N. Veziroglu and J.B. Taylor eds., pp. 1075-1083 (Pergamon Press, New York, 1984).

Selected Invited Presentations Given by Paranthaman (> 100; Since 2010)

1. Parans Paranthaman - Invited talk - Recovery of lithium from brines, clay minerals, and recycled lithium-ion batteries, TechConnect 2022, Washington DC, June 13-15, 2022.
2. Parans Paranthaman - Recovery of lithium extraction from brines, TechConnect 2022, Washington DC, June 13-15, 2022.
3. Parans Paranthaman - Invited talk - University of Kentucky faculties on Additive Manufacturing of Rare Earth Magnets and Lithium Extraction, virtual meeting, May 18, 2022.
4. Parans Paranthaman - Invited talk – Nichia corporation on 3D Printing of Soft and Permanent Magnets, virtual meeting, May 27, 2022.
5. Parans Paranthaman, Keynote speaker: SAMPE 2022, Charlotte, NC
6. Parans Paranthaman, Invited talk: Additive Manufacturing of Magnets, General Motors, 2022.
7. Parans Paranthaman, Invited talk: Additive Manufacturing of Magnets, General Electric, 2022.
8. Parans Paranthaman, Invited talks: Direct Lithium Extraction from Brines and Minerals – Ford, 2022
9. M. P. Paranthaman, “Additive Manufacturing of High Performance NdFeB Permanent Magnets,” US Japan Bilateral Meeting, Japan, December 11, 2020.
10. M. P. Paranthaman, Lithium Recovery from Aqueous Resources and Batteries – A Brief Review, Presentation for ORISE Interns at ORNL, January 7, 2020.
11. M. P. Paranthaman, “Additively Printed Hard and Soft Magnets Enable All-3D Printed Motors, Magnetics 2020, Orlando, Florida, February 11, 2020.
12. M. P. Paranthaman, “Lithium Recovery from Aqueous Resources and Batteries – A Brief Review”, CMI Winter Meeting, Golden, Colorado, February 13, 2020.
13. M. Parans Paranthaman et al., “Novel Wide Bandgap Gallium Oxide (Ga_2O_3) Based Power Electronic Devices,” TMS 2020, San Diego, CA, February 23-27, 2020.
14. M. P. Paranthaman, “Additive Manufacturing of Rare Earth Bonded Permanent Magnets: Prospects and Challenges”, TMS 2020, San Diego, CA, February 27, 2020
15. M. P. Paranthaman, “Additive Manufacturing Method to Fabricate Crack-free Highly Dense Fe-6 wt.% Si Soft Magnets”, TMS 2020, San Diego, CA, February 27, 2020.
16. M. P. Paranthaman, Recovery of Carbon from Recycled Tire Rubber for Clean Energy Applications”, presentation for SULI CCI Interns at ORNL, April 22, 2020.
17. M. P. Paranthaman, “Recovery of Carbon from Recycled Tire Rubber for Clean Energy Applications”, presentation for ORISE high school teachers, July 15, 2020.
18. Invited Speaker, Title: Additive Printing of High Performance Magnets, ORNL Facilities and Operations Division Meeting, October 1, 2018.

19. Invited Speaker, Title: Lithium Ion Batteries and Beyond, Navy Visit, ORNL, TN, October 11, 2018.
20. Invited Speaker, Title: Novel Carbon Polyaniline Capacitive Deionization Electrodes and Magnetic Nano-adsorbents for Water Treatments, 20th Symposium on Separation Science and Technology for Energy Applications, Gatlinburg, TN, October 23, 2018.
21. Invited Speaker, Title: Additive Printing of High Performance Magnets, ORNL Oregon State University Visit, Oak Ridge, TN, November 1, 2018.
22. Invited Speaker, Title: Additive Printing of High Performance Magnets, ORNL Dyson Company Visit, Oak Ridge, TN, November 2, 2018.
23. Invited Speaker, Title: Additive Printing of High Performance NdFeB Magnets, Busek Company Visit, Natick, MA, November 12, 2018.
24. Invited Speaker, Title: Additive Printing of High Performance NdFeB Magnets, ORNL SuperPower Company Visit, Oak Ridge, TN, November 13, 2018.
25. Invited Speaker, Title: Lithium Extraction using LDH Sorbents from Geothermal Brine Solution, American Institute of Chemical Engineers Local Chapter, Knoxville TN, November 15, 2018.
26. Invited Speaker, Title: Lithium Extraction from Geothermal Brine Solution, CMI Webinar Series, November 28, 2018
27. Invited Speaker, Title: Additive Printing of High Performance NdFeB Magnets, ORNL SULI Interns, Oak Ridge, TN, December 11, 2018.
28. Invited Speaker, Title: Additive Manufacturing of Magnets, US-Japan Bilateral Workshop, Washington DC, January 9, 2019.
29. AM Magnets: Panel Chair: Invited Speaker, Title: Additive Manufacturing of Magnets, Magnetics 2019, Orlando, FL, January 31, 2019.
30. Invited Speaker: Title: Additive Manufacturing of Magnets, NREL Visit, Golden, CO, February 4, 2019.
31. Invited Speaker: Title: Additive Manufacturing of High Performance NdFeB Nylon Polymer Bonded Magnets, Dyson Magnet Group, ORNL, TN, February 11, 2019.
32. Invited Speaker: Title: Recovery of Carbon from Recycled Tire Rubber for Energy Storage Applications, SULI interns, ORNL, TN, February 13, 2019.
33. Invited Speaker: Title: Additive Manufacturing of High Performance NdFeB Magnets, Roane State Community College, Oak Ridge, TN, February 20, 2019.
34. Keynote Speaker: Title: Novel Tire-derived Carbon Catalysts for Converting Waste Cooking Oil into Biofuel, Catalysis 2019 Meeting, Houston, TX, February 25, 2019
35. Invited Speaker: Title: 3-D Printing of NdFeB Nylon Polymer Bonded Magnets, APS Press Meet, Boston, MA, March 4, 2019.
36. Invited Speaker: Title: Additive Manufacturing of High Performance Anisotropic NdFeB Permanent Magnets, TMS Spring 2019 Meeting, San Antonio, TX, March 12, 2019.

37. Invited Speaker: Title: Additive Manufacturing of High Performance Rare Earth Permanent Magnets: Prospects and Challenges, TMS Spring 2019 Meeting, San Antonio, TX, March 13, 2019.
38. Invited Speaker: Title: Additive Manufacturing of Magnets, AMO Stakeholders Meeting, ORNL, TN, March 26, 2019.
39. Speaker: Title: Novel carbon electrodes for next generation intercalation batteries, MRS Spring Meeting, Phoenix, AZ, April 25, 2019.
40. Invited Speaker: Title: Additive Manufacturing of High Performance Magnets, IEEE Magnetics Society Workshop, Virginia Commonwealth University, Richmond, VA, June 7, 2019.
41. Invited Speaker: Title: Additive Manufacturing of High Performance NdFeB Magnets, Sandia National Laboratory Magnet Workshop, Albuquerque, NM, June 18, 2019.
42. Keynote Speaker: Title: Additive Manufacturing of High Performance NdFeB Magnets, 4th International Conference on Magnetism and Magnetic Materials, London, UK, August 19, 2019.
43. Invited Speaker: Title: Additive Manufacturing of High Performance NdFeB Magnets, Department of Physics, University of Warwick, Coventry, UK, August 20, 2019.
44. Tire derived carbon for Sodium Ion Batteries, Chairing Session: Battery and Energy Technology; New Orleans, Louisiana, May 28 – June 1, 2017; <http://www.electrochem.org/231>
45. Additive Manufacturing of NdFeB Magnets, INTERMAG 2017, Dublin, Ireland, April 24-28, 2017; <http://intermag2017.com/>
46. Additive Manufacturing of NdFeB Magnets, Army Research Lab Director Visit to ORNL, April 10, 2017
47. 3D Printing of Bonded Magnets, Tengam, Magnet company, Grand Rapids, Michigan, March 23, 2017; <http://www.tengam.com/>
48. Recovery of Carbon from Recycled Tires for Energy Storage Applications, ORNL SULI/CCI Interns, Oak Ridge, Tennessee, March 15, 2017
49. Novel Tire Derived Carbon for Energy Storage Applications College of Engineering, Florida State University, February 1-2, 2017; Presented two department seminars
50. Big Area Additive Manufacturing of NdFeB Bonded Magnets, at the Magnetics 2017 conference and CMI Industry Meet, Orlando, Florida, January 18-20, 2017
51. Additive Manufacturing of Bonded Magnets, Arnold Magnetics Technologies, Rochester, New York, December 12, 2016; <http://www.arnoldmagnetics.com/en-us/>
52. Invited Speaker, Title: Safe and Fast Charging Structural Lithium-Ion Batteries, Global Security Directorate – SAG Meeting, ORNL, Oak Ridge, Tennessee, December 6, 2016
53. Speaker, Two oral presentations, Title: High Performance Tire-Derived Carbon Anodes for Sodium-Ion Batteries, and Additive Manufacturing of Permanent Magnets, MRS Fall Meeting, Boston, Massachusetts, November 27- December 2, 2016; <http://www.mrs.org/fall2016>

54. Invited Speaker, Title: Current Status of Bonded Magnets Research, US – Japan 4th Bilateral Workshop, Ames Laboratory, Ames, Iowa, November 7-8, 2016
55. Invited Speaker, Title: Novel Carbon Materials for Energy Storage Applications, ORNL SULI/CCI Interns, Oak Ridge, Tennessee, October 12, 2016
56. Webinar Presentation, Additive Manufacturing of NdFeB Permanent Magnets, CMI Website Published, September 21, 2016 – Record number of listeners signed up for this CMI popular webinar presentation
57. Invited Speaker, Title: Additive Manufacturing of Permanent Magnets, CMI Annual Meeting, Oak Ridge, Tennessee, August 16-18, 2016
58. Invited Speaker, Title: Recovery of Lithium from Geothermal Brines and Current Status of Lithium-ion Batteries, Hazen Research, Denver, Colorado, August 12, 2016
59. Invited Speaker, Aluminum Lithium Hybrid Battery, Alcoa Technology Center, Pittsburgh, PA, May 18-19, 2016
60. Invited Speaker, Department Seminar, Title: Novel Carbon from Recycled Tires for Batteries and Supercapacitors, Wake Forest University, Winston-Salem, North Carolina, April 27-28, 2016
61. Invited Speaker, Title: Low-cost tire-derived carbon composite electrodes for energy storage applications; Co-organized a symposium title: Electrode Materials and Electrolytes for Lithium and Sodium-Ion Batteries, Session Chair, MRS Spring Meeting 2016, Phoenix, Arizona, March 27 – April 1, 2016
62. Invited Speaker, Title: 3D Printing of NdFeB Bonded Magnets, TMS 2016 145th Annual Meeting, Nashville, Tennessee, February 17-18, 2016
63. Invited Speaker, Title: Low-cost, high performance anodes for lithium-ion batteries, ORNL SULI Interns, Oak Ridge, Tennessee, February 10, 2016
64. Invited Speaker, Title: Current Status of NdFeB Magnet Printing Research, CMI Magnet Thrust Meeting, San Diego, California, January 11-12, 2016
65. Invited Speaker, Title: Additive Manufacturing of Permanent Magnets, 1st TMS Summit on Integrated Manufacturing and Materials Innovations, Pittsburgh, Pennsylvania, November 17-18, 2015
66. Invited Speaker, Title: Bonded Magnet Research, US – Japan Bilateral Workshop; US – Japan – Europe Trilateral Workshop; Tokyo, Japan, October 26-28, 2015
67. Invited Speaker, Title: Lithium-Ion Batteries, ORNL SULI Interns, Oak Ridge, Tennessee, October 7, 2015
68. Invited Speaker, CMI Annual Meeting, Idaho National Laboratory, Idaho Falls, Idaho, August 4-6, 2015
69. Invited Speaker, Magnet Applications Inc., DuBois, Pennsylvania, July 8, 2015
70. Invited Speaker, RJLee Group Inc., Monroeville, Pennsylvania, June 11-12, 2015
71. Invited Speaker, United Technologies Research Center, Hartford, Connecticut, May 4-5, 2015

72. Invited Speaker, Brown University, CMI Magnet Thrust Meeting, Providence, Rhode Island, May 6-7, 2015
73. Invited Speaker, ACS Spring 2015 Meeting, Denver, Colorado, March 23-25, 2015
74. Invited Keynote Speaker, Rethink Disruption – Emerging Technologies Transforming Business & Society Meeting, San Francisco, California, November 5-6, 2014
75. Invited Speaker, CMI Annual Meeting, Ames, Iowa, September 8-10, 2014
76. Webinar Presentation, Title: Pyrolytic Carbon Black Composites, YouTube Uploaded, August 7, 2014
77. Invited Speaker, Title: 3D Printing of NdFeB Magnets, GE Global Corporation, CMI Magnet Thrust Meeting, Albany, New York, August 4-6, 2014
78. Invited Speaker, Title: Advancements in Additive Manufacturing, Lawrence Livermore National Laboratory, CMI Magnet Thrust Meeting, Livermore, California, April 7-8, 2014
79. Invited Speaker, Title: Lithium-ion Batteries, SULI Interns, ORNL, Oak Ridge, Tennessee, January 15, 2014
80. Speaker, Title: Investigation of Li-rich High Energy Density Cathodes for Li-ion Batteries, MRS Fall 2013 meeting, Boston, Massachusetts, December 2-5, 2013
81. Invited Speaker, Title: Recovery of Lithium from Geothermal Brine, Simbol Materials Inc., Pleasanton, California, November 21-22, 2013
82. Invited Speaker, Title: Mesoporous TiO₂ Anodes for Lithium-Ion Batteries, SPARK meeting, ORNL, Oak Ridge, Tennessee, November 18, 2013
83. Invited Speaker, Title: TiO₂ Based Safe Lithium-Ion Batteries, Cristal USA, Baltimore, Maryland, October 10-11, 2013
84. Invited Speaker, Title: Additive Manufacturing of Magnets, Ames Laboratory, CMI Kickoff Meeting, Ames, Iowa, September 10-12, 2013
85. Invited Speaker, Title: Novel Solid Electrolytes for Lithium-ion Batteries, The University of Texas at Austin, BES Meeting, Austin, Texas, August 26-27, 2013
86. Invited Speaker, Title: Lithium Extraction Methods, Simbol Materials Inc., Pleasanton, California, July 25-26, 2013
87. Invited Speaker, Title: Investigation of Li-rich High-Energy Density Cathodes, Chaired Sessions, 223rd Electrochemical Society Meeting, Toronto, Canada, May 13-16, 2013
88. Invited Speaker, Title; High Performance Cathode Materials for Lithium-ion Batteries, Lawrence Berkeley National Laboratory, Battery Workshop, Berkeley, California, October 10-11, 2012
89. Invited Speaker, Title: Lithium-ion Batteries, Technical Society of Knoxville, Knoxville, Tennessee, September 18, 2012
90. Invited Speaker, Title: Titanium Oxides Based Safe Batteries, Bren-Tronics Energy Systems, Gainesville, Florida, August 29-30, 2012

91. Invited Speaker, Title: Lithium-ion Batteries, Vellore Institute of Technology, Vellore, India, August 14, 2012
92. Invited Speaker, Title: Fast-charging and Safe Lithium-Ion Batteries, Sandia National Laboratory, Albuquerque, New Mexico, July 9-10, 2012
93. Invited Speaker, Title: TiO₂ Based Lithium-Ion Batteries, LBNL Advanced Light Source, Berkeley, California, May 1-2, 2012
94. Invited Speaker, Title: Advanced Anode Materials for Lithium-ion Batteries, Bren-Tronics Energy System, Alachua, Florida, December 8-9, 2011
95. Speaker, Two Oral Presentations, Title: Controlled surface modification of LiMn_{1.5}Ni_{0.5}O₄ spinel cathode materials for Lithium-ion batteries; Mesoporous TiO₂ sphere with nitrogen adsorption for lithium-ion batteries, 220th ECS Fall Meeting, Boston, Massachusetts, October 12-13, 2011
96. Invited Speaker, Title: Flexible Silicon Solar Photovoltaics, Ferro Corporation, Cleveland, Ohio, February 23-24, 2011
97. Speaker, Title: Single Crystalline Si Photovoltaics on Flexible Copper Substrates, MRS Fall Meeting 2010, Boston, Massachusetts, November 28 – December 1, 2010
98. Speaker, Co-organizing a Symposium, Title: High Temperature Superconductor Wires and Tapes, MS&T 2010, Houston, Texas, October 18-20, 2010
99. Invited Speaker, Title: Flexible Si Thin Films, Ascent Solar, Denver, Colorado, April 20-21, 2010
100. Invited Speaker, Title: Growth of textured Si thin films on RABiTS, National Renewable Energy Laboratory, Ampulse Meeting, Denver, Colorado, April 21-22, 2010

Total Number of Patents, Patent Applications, and Inventions of Parans Paranthaman: 106

Issued U.S. Patents (62)

Published U.S. Patent Applications (10)

Korean Patent Applications (1)

Germany Patent Applications (1)

Australian Patent Applications (1)

European Patent Applications (2)

World Intellectual Property Organizations (WO Patent Applications) (14)

Invention Disclosures (15)

List of Issued U.S. Patents (62)

1. C. I. Nlebedim, A. Sarkar, M. J. Kramer, T. Lograsso, C. Haase, S. Adinarayanappa, **M. P. Paranthaman**, "Additive manufacturing with in-situ magnetic field source," U.S. Patent # 12,070,798 B2, August 27, 2024.
2. R. R. Bhave, V. Deshmane, N. N. Linneen, S. Harrison, **M. Paranthaman**, and B. A. Moyer, "Forward Osmosis Composite Membranes for Concentration of Lithium Containing Solutions," U.S. Patent # 12,030,017 B2, July 9, 2024.

3. **M. P. Paranthaman**, C. Cramer, P. Nandwana, A. Elliott, and C. Chinnasamy, "Indirect additive manufacturing process for fabricating bonded soft magnets," US Patent 11993834 May 28, 2024.
4. **M. P. Paranthaman**, B. K. Post, B. C. Sales, "Alignment system for magnetic particulate material used for additive manufacturing," U.S. Patent 11,980,939 B2, May 14, 2024.
5. B. G. Compton, **M. P. Paranthaman**, Orlando Rios, C. I. Nlebedim, "Novel 3D Printing Method to Fabricate Bonded Magnets of Complex Shape," US Patent No. 1155905717 B2, Issued on February 28, 2023.
6. **M. P. Paranthaman**, C. Tsouris, S. F. Evans, M. R. Ivancevic, "Adsorbents, systems and methods for the removal of heavy metals from contaminated water," U.S. Patent No. 11,541,372 B2, Issued on January 3, 2023.
7. A. K. Naskar, **M. P. Paranthaman**, X. Yang, Y. Xia, Z. D. Hood, Y. Li, "Carbon Supports for Oxygen Reduction Catalysts," U.S. Patent # 11,384,219 B2, July 12, 2022.
8. R. R. Bhave, S. Harrison, B. A. Moyer, and **M. P. Paranthaman**, "LITHIUM EXTRACTION COMPOSITE FOR RECOVERY OF LITHIUM FROM BRINES, AND PROCESS OF USING SAID COMPOSITION, U.S. Patent # 11,253,820 B2; Issued on February 22, 2022.
9. **M. P. Paranthaman**, A. K. Naskar, A. Lachgar, Y. Xia, Z. D. Hood, S. P. Adhikari, "Production of Biofuels with Novel Salts Impregnated Tire-Derived Carbon Catalysts", U.S. Patent # 11,117,121, Issued on September 14, 2021.
10. A. Naskar, and **M. P. Paranthaman**, "Pyrolytic carbon black composite and method of making the same," U.S. Patent # 10,985,372, Issued on April 20, 2021.
11. C. A. Bridges, **M. P. Paranthaman**, G. Veith, Z. Bi, "Nitride- and Oxide-modified electrode compositions and methods of make," U.S. Patent # 10,879,533, Issued on December 29, 2020.
12. **M. P. Paranthaman**, A. K. Naskar, C. Tsouris, and M. R. Ivancevic, "Carbon Electrodes Based Capacitive Deionization for the Desalination of Water," U.S. Patent # 10,807,888 B2, Issued on October 20, 2020.
13. **M.P. Paranthaman**, L. Li, V. Kunc, B.K. Post, O. Rios, R.H. Fredette, J. Ormerod, "MAGNETIC FEED MATERIAL AND ITS USE IN PRODUCING BONDED PERMANENT MAGNETS BY ADDITIVE MANUFACTURING", U.S. Patent # 10,766,181 B2, Issued on September 8, 2020.
14. **M. P. Paranthaman**, M. A. McGuire, D. S. Parker, O. Rios, B. C. Sales, H. Ucar, S. K. McCall, R. W. McCallum, and C. I. Nlebedim, "Neodymium-iron-boron magnet with selective surface modification, and method of producing same," U.S. Patent # 10,586,640, Issued on March 10, 2020.

15. A. K. Naskar, **M. P. Paranthaman**, M. Boota, and Y. Gogotsi, "Flexible and Conductive Tire-derived Carbon/Polymer Paper as Pseudocapacitive Electrode," U.S. Patent # 10,460,881; Issued on October 29, 2019.
16. Y. Li, **M. P. Paranthaman**, A. K. Naskar, and K. M. Akato, "Carbon-metal Oxide Composite Materials and Their Use in Anodes of Lithium and Sodium ion Batteries," U.S. Patent # 10,355,268; Issued on July 16, 2019.
17. A. K. Naskar, and **M. P. Paranthaman**, "Pyrolytic Carbon Black Composite and Method of Making the Same," U.S. Patent # 10,320,000; Issued on June 11, 2019.
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