

Curriculum Vitae

M. Parans Paranthaman, Ph.D. * Oak Ridge National Laboratory

Distinguished Corporate Fellow and Group Leader/UT-Battelle Distinguished Inventor
Professor, Bredeesen Center Joint Faculty, The University of Tennessee, Knoxville

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	Chemistry

Research and Professional Experience

- 2017-Present: Distinguished Corporate Fellow and Group Leader, Materials Chemistry Group, Chemical Sciences Division, Oak Ridge National Laboratory, Oak Ridge, Tennessee
- 2010-Present: Professor, The University of Tennessee, Knoxville, Bredeesen Center for Interdisciplinary Research and Graduate Education Faculty
- 2006-2016: 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
- 1993-1999: Research Staff, 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 **Professor John B. Goodenough**)
- 1982-1988: Research Fellow, Materials Science Research Center, Indian Institute of Technology, Madras, India (Ph.D. Thesis Advisor: **Professor G. V. Subba Rao**)
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Editorial Boards – Journals

- Associate Editor, Journal of the American Ceramic Society (2004-Present)
- Editorial Board, Applied Sciences (2017-Present)
- Editorial Board, Materials Science and Engineering (2017-Present)
- Editorial Board, Materials Science and Engineering B Journal (2017-Present)
- Editorial Board, MRS Advances (2016-Present)
- Co-editor, MRS Advances, MRS Spring 2016 Meeting Proceedings, March 2016
- Key Reader: Metallurgical and Materials Transactions E: Materials for Energy Systems (2014-Present)
- International Editorial Board, European Superconductivity News Forum (2012-Present)
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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 “Sodium-ion Batteries”, Springer, 2017
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: UT-Battelle/ORNL Corporate Fellow (2017)
- Fellow: Materials Research Society Fellow (2017)
- Fellow: American Association for the Advancement of Science(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: Materials Research Society, 1993-present
- Member: American Chemical Society, 2009-present
- Member: Electrochemical Society, 2009-present
- Member: American Physical Society, 2013-present

Conferences/Workshops Organized

- 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
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- 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

- ORNL Distinguished Fellows Review Committee Member (2017-Present)
- ORNL Postdoc Group Mentor (2017)
- Reviewed several Advanced Light Source User Proposals, Lawrence Berkeley National Laboratory, CA, 2013-present
- Reviewed several 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

- 2017 **Fellow** of Materials Research Society
 - 2017 Battelle Celebration of Solvers Award
 - 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** Finalist: 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
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- 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 since
- 2003 Patent Royalty Awards for patents licensed
- 2001 Federal Laboratory Consortium (**FLC**) Award for Excellence in Technology Transfer
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- 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. (1988) with Prof. G.V. Subba Rao (IIT, Madras);
 Postdoc (1988-1991) with Prof. John B. Goodenough (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
 3 Ph.D. students (through University of Tennessee, Knoxville and University of Houston)
 2 M.S. students (through Tenn. Tech. Univ.)
 70 Undergraduate students; 5 College teachers; 26 High school teachers, and 14 postdoctoral scholars

Present Post Docs (1):

Ling Li

Present Graduate Student (1)

Yunchao Li

Teaching Experience

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

Collaborators from other Institutions (past 60 months)

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
 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

Publications

I. Summary of Paranthaman's Publications

Journal Publications: >364

Web of Science Total Citations **10393**; h-index: **51**

Google Scholar Total Citations **14377**; h-index: **58**

Patents Issued: **34**

Patent Applications Published: >14

Books co-edited: **6**

Book Chapters/Proceedings Written: **58**

II. Journal Publications

1. Y. Li, S. Wan, G.M. Veith, R.R. Unocic, M.P. Paranthaman, S. Dai, and X.G. Sun, "A Novel Electrolyte Salt Additive for Lithium-Ion Batteries with Voltages Greater than 4.7 V," *Adv. Energy Mater.* 7, 1601397 (2017). **DOI:** 10.1002/aenm.201601397
 2. J.S. Zhang, J.A. Schott, Y. Li, W.C. Zhan, S.M. Mahurin, K. Nelson, X.G. Sun, M.P. Paranthaman, and S. Dai, "Membrane-Based Gas Separation Accelerated by Hollow Nanosphere Architectures," *Adv. Mater.* 29, 1603797 (2017). **DOI:** 10.1002/adma.201603797
 3. I.C. Nlebedim, H. Ucar, C.B. Hatter, R.W. McCallum, S.K. McCall, M.J. Kramer, and M.P. Paranthaman, "Studies on in situ Magnetic Alignment of Bonded Anisotropic Nd-Fe-B Alloy Powders," *J. Mag. And Mag. Mater.* 422, 168 (2017). **DOI:** 10.1016/j.jmmm.2016.08.090
 4. Y.F. Yue, Y. Li, C.A. Bridges, G. Rother, J.S. Zhang, J.H. Chen, D.K. Hensley, M.K. Kidder, B.C. Richardson, M.P. Paranthaman, and S. Dai, "Hierarchically Superstructured Metal Sulfides: Facile Perturbation-Assisted Nanofusion Synthesis and Visible Light Photocatalytic Characterizations," *ChemNanoMat.* 2, 1104 (2016). **DOI:** 10.1002/cnma.201600292
 5. L. Li, A. Tirado, I.C. Nlebedim, O.Rios, B. Post, V. Kunc, R.R. Lowden, E. Lara-Curzio, R. Fredette, J. Ormerod, T.A. Lograsso, and M.P. Paranthaman, "Big Area Additive Manufacturing of High Performance Bonded NdFeB Magnets," *Scientific Reports* 6, 36212 (2016). **DOI:** 10.1038/srep36212
 6. G.E. Jellison, T. Ayug, A.R. Lupini, M.P. Paranthaman, and P.C. Joshi, "Optical Properties of a Nanostructured Glass-based Film using Spectroscopic Ellipsometry," *Thin Solid Films* 617, 38 (2016). **DOI:** 10.1016/j.tsf.2015.12.046
 7. A. al-Wahish, U. al-Binni, C.A. Bridges, S. Tang, Z. Bi, M.P. Paranthaman, A. Huq, and D. Mandrus, "In Situ X-ray and Neutron Diffraction of the Rare-Earth Phosphate Proton Conductors Sr/Ca-Doped
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- LaPO₄ at Elevated Temperatures,” *Chem. Mater.* 28, 7232 (2016).
DOI: 10.1021/acs.chemmater.6b01531
8. Y. Han, J.M.Y. Carrillo, Z. Zhang, Y. Li, K. Hong, B.G. Sumpter, M. Ohl, M.P. Paranthaman, G.S. Smith, C. Do, “Thermoreversible Morphology and Conductivity of a Conjugated Polymer Network Embedded in Block Copolymer Self-Assemblies,” *Small* 12, 4857 (2016).
DOI: 10.1002/smll.201601342
 9. J.E. Mathis, M.K. Kidder, Y. Li, J. Zhang, and M.P. Paranthaman, “Controlled Synthesis of Mesoporous Codoped Titania Nanoparticles and Their Photocatalytic Activity,” *Adv. in Nano Research*, 4, 157 (2016). **DOI:** 10.12989/anr.2016.4.3.157
 10. Y. Li, G. Fu, M. Watson, S. Harrison, and M.P. Paranthaman, “Monodispersed Li₄Ti₅O₁₂ with Controlled Morphology as High Power Lithium Ion Battery Anodes,” *ChemNanoMat*. 7, 642 (2016).
DOI: 10.1002/cnma.201600106
 11. M.P. Paranthaman, C.S. Shafer, A. Elliott, D. Siddel, M.A. McGuire, R.M. Springfield, J. Martin, R. Fredette, and J. Ormerod, “Binder Jetting: A Novel NdFeB Bonded Magnet Fabrication Process,” *JOM* 68, 1978 (2016). **DOI:** 10.1007/s11837-016-1883-4
 12. Y. Li, M.P. Paranthaman, K. Akato, A.K. Naskar, A.M. Levine, R.J. Lee, S. Kim, J. Zhang, S. Dai, and A. Manthiram, “Tire-derived Carbon Composite Anodes for Sodium-ion Batteries,” *J. Power Sources* 316, 232 (2016). **DOI:** 10.1016/j.jpowsour.2016.03.071
 13. M. Naguib, T. Saito, S. Lai, M.S. Rager, T. Aytug, M.P. Paranthaman, M.Q. Zhao, and Y. Gogotsi, “Ti₃C₂Tx (MXene)-Polyacrylamide Nanocomposite Films,” *RSC Adv.* 6, 72069 (2016).
DOI: 10.1039/c6ra10384g
 14. M.A. Abreu-Sepulveda, C. Dhital, A. Huq, C.A. Bridge, M.P. Paranthaman, S.R. Narayanan, D.J. Quesnel, D.A. Tryk, and A. Manivannan, “The Influence of Fe Substitution in Lanthanum Calcium Cobalt Oxide on the Oxygen Evolution Reaction in Alkaline Media,” *J. Electrochem. Soc.* 163, F1124 (2016). **DOI:** 10.1149/2.1311609
 15. M. Abreu-Sepulveda, M. Williams, A. Huq, C. Dhital, Y.C. Li, M.P. Paranthaman, K. Zaghbi, A. Manivannan, “Synthesis and characterization of substituted garnet and perovskite-based lithium-ion conducting solid electrolytes,” *Ionics* 22 (3) 317-325 (2016). **DOI:**10.1007/s11581-015-1556-2
 16. X. G. Sun, Z. Bi, H. Liu, Y. Fang, C. A. Bridges, M. P. Paranthaman, S. Dai, G. M. Brown, “A high performance hybrid battery based on aluminum anode and LiFePO₄ cathode,” *Chem. Comm.* 52(8), 1713-1716 (2016). **DOI:** 10.1039/c5cc09019a
 17. Z. D. Hood, H. Wang, Y. Li, A. S. Pandian, M. P. Paranthaman, and C. Liang, “The filler effect”: A study of solid oxide fillers with beta-Li₃PS₄ for lithium conducting electrolytes”, *Solid State Ionics* 283, 75-80 (2015). **DOI:**10.1016/j.ssi.2015.10.014
 18. Y. Li, M. P. Paranthaman, L. W. Gill, E. W. Hagaman, Y. Wang, A. P. Sokolov, S. Dai, C. Ma, M. F. Chi, G. M. Veith, A. Manthiram, J. B. Goodenough, “Conduction below 100 degrees C in nominal Li₆ZnNb₄O₁₄”, *J. Mater. Sci.* 51 (2), 854-860 (2016). **DOI:** 10.1007/s10853-015-9408-z
 19. S. M. Yang, M. P. Paranthaman, T. W. Noh, S. V. Kalinin, and E. Strelcovt, “Nanoparticle Shape Evolution and Proximity Effects During Tip-Induced Electrochemical Processes”, *ACS Nano* 10 (1), 663-671 (2016). **DOI:** 10.1021/acsnano.5b05686
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20. J. E. Mathis, J. J. Lieffers, C. Mitra, F. A. Reboredo, Z. Bi, C. A. Bridges, M. K. Kidder, and M. P. Paranthaman, "Increased photocatalytic activity of TiO₂ mesoporous microspheres from codoping with transition metals and nitrogen", *Ceramics International* 42 (2) 3556-3562 (2016). DOI: 10.1016/j.ceramint.2015.10.164
 21. M. Boota, M.P. Paranthaman, A.K. Naskar, Y.C. Li, K. Akato, Y. Gogotsi, "Waste tire derived carbon-polymer composite paper as Pseudocapacitive electrode with long cycle life," *ChemSusChem* 8 (21) 3576-3581 (2015). DOI: 10.1002/cssc.201500866
 22. Jinshui Zhang, Ying Bai, Xiao-Guang Sun, Yunchao Li, Bingkun Guo, Jihua Chen, Gabriel M. Veith, Dale K. Hensley, Mariappan Parans Paranthaman, John B. Goodenough, and Sheng Dai, "Superior Conductive Solid-like Electrolytes: Nanoconfining Liquids within the Hollow Structures", *Nano Letters*, 15, 1062-1069 (2015); <http://dx.doi.org/10.1021/nl5040286>
 23. S. M. Yang, E. Strelcov, M. P. Paranthaman, A. Tselev, T. W. Noh, and S. V. Kalinin, "Humidity Effect of Nanoscale Electrochemistry in Solid Silver Ion Conductors and the Dual Nature of Its Locality." *Nano Letters* 15, 1062-1069 (2015). <http://dx.doi.org/10.1021/nl5040286>
 24. Sang Mo Yang, M. Baris Okatan, M. Parans Paranthaman, Stephen Jesse, Tae Won Noh, and Sergei V. Kalinin, "Second harmonic detection in the electrochemical strain microscopy of Ag-ion conducting glass." *Appl. Phys. Lett.* 105, 193106 (2014). <http://dx.doi.org/10.1063/1.4901736>
 25. T. Aytug, A.R. Lupini, G.E. Jellison, J.C. Pooran, I.N. Ivanov, L. Tao, P. Weng, R. Menon, R.M. Trejo, E. Lara-Curzio, S.R. Hunter, J.T. Simpson, M. P. Paranthaman, and D.K. Christen, 'Monolithic graded-refractive-index glass-based antireflective coatings: broadband/omnidirectional light harvesting and self-cleaning characteristics,' *J. Mater. Chem. C* 3, 5440 (2015)
 26. J. E. Mitchell, D. A. Hillesheim, C. A. Bridges, M. P. Paranthaman, K. Gofryk, M. Rindfleisch, M. Tomsic, and A. S. Sefat, "Optimization of a non-arsenic iron-based superconductor for wire fabrication," *Superconductor Science & Technol.* 28 (4) 045018 (2015) DOI: 10.1088/0953-2048/28/4/045018.
 27. Huseyin Ucar, Ikenna C. Nlebedim, M. Parans Paranthaman, and R. William McCallum "Improving the energy product of amorphous Pr-Co-B powders by mechanical milling and nanocrystallization", *Journal of Applied Physics*, 116, 233901 (2014).
 28. Loraine Torres-Castro, Jifi Shojan, Christian M. Julien, Ashfia Huq, Chetan Dhital, M. P. Paranthaman, Ram S. Katiyar, and A. Manivannan, "Synthesis, characterization and electrochemical performance of Al-substituted Li₂MnO₃," *Materials Science and Engg. B* 201, 13-22 (2015).
 29. Yunchao Li, Mariappan Parans Paranthaman, Lance W. Gill, Edward W. Hagaman, Yangyang Wang, Alexi P. Sokolov, Sheng Dai, Cheng Ma, Miaofang Chi, Gabriel M. Veith, Arumugam Manthiram, and John B. Goodenough, "Conduction Below 100 °C in Nominal Li₆ZnNb₄O₁₄," *J. Mater. Sci.* 51 (2), 854-860 (2016). DOI: 10.1007/s10853-015-9408-z
 30. Yanfeng Yue, Yunchao Li, Zhonghe Bi, Gabriel M. Veith, Craig A. Bridges, Bingkun Guo, Jihua Chen, David R. Mullins, Sumedh P. Surwade, Shannon M. Mahurin, Hongjun Liu, M. Parans Paranthaman, and Sheng Dai, "A POM-Organic Framework Anode for Li-ion Battery," *J. Mater. Chem. A* 3, 22989 (2015). DOI: 10.1039/c5ta06785e
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31. Ucar, H.; Nlebedim, I.C.; Paranthaman, M.P.; McCallum, R.W. Evolution of Structural and Magnetic Properties due to Nanocrystallization of Mechanically Milled Amorphous Pr-Co-B Powders. *J. Appl. Phys.* **2014**, *116*(23), 233901. DOI: 10.1063/1.4904359
 32. Harrison, K. L.; Bridges, C. A.; Segre, C. U.; Varnado, C. D.; Applestone, D.; Bielawski, C. W.; Paranthaman, M. P.; Manthiram, A., 'Chemical and Electrochemical Lithiation of LiVOPO₄ Cathodes for Lithium-Ion Batteries.' *Chem. Mat.* **2014**, *26*, (12), 3849-3861.
 33. Bi, Z. H.; Paranthaman, M. P.; Guo, B. K.; Unocic, R. R.; Meyer, H. M.; Bridges, C. A.; Sun, X. G.; Dai, S., 'High performance Cr, N-codoped mesoporous TiO₂ microspheres for lithium-ion batteries. *J. Mater. Chem. A* **2014**, *2*, (6), 1818-1824.
 34. Cheng, Y. Q.; Bi, Z. H.; Huq, A.; Feygenson, M.; Bridges, C. A.; Paranthaman, M. P.; Sumpter, B. G., An integrated approach for structural characterization of complex solid state electrolytes: the case of lithium lanthanum titanate.' *J. Mater. Chem. A* **2014**, *2*, (7), 2418-2426.
 35. Beck, F. R.; Cheng, Y. Q.; Bi, Z. H.; Feygenson, M.; Bridges, C. A.; Moorhead-Rosenberg, Z.; Manthiram, A.; Goodenough, J. B.; Paranthaman, M. P.; Manivannan, A., 'Neutron Diffraction and Electrochemical Studies of Na_{0.79}CoO₂ and Na_{0.79}Co_{0.7}Mn_{0.3}O₂ Cathodes for Sodium-Ion Batteries. *J. Electrochem. Soc.* **2014**, *161*, (6), A961-A967.
 36. Liao, C.; Han, K. S.; Baggetto, L.; Hillesheim, D. A.; Custelcean, R.; Lee, E. S.; Guo, B. K.; Bi, Z. H.; Jiang, D. E.; Veith, G. M.; Hagaman, E. W.; Brown, G. M.; Bridges, C.; Paranthaman, M. P.; Manthiram, A.; Dai, S.; Sun, X. G., 'Synthesis and Characterization of Lithium Bis (fluoromalonato) borate for Lithium-Ion Battery Applications.' *Adv. Energy Mater.* **2014**, *4*, (6) 1301368.
 37. Al-Wahish, A.; Jalarvo, N.; Bi, Z.; Herwig, K. W.; Craig Bridges, C. A.; Paranthaman, M. P.; Mandrus, D. 'Quasi-Elastic Neutron Scattering Reveals Fast Proton Diffusion in Ca-Doped LaPO₄.' *J. Phys. Chem. C* **2014**, *118*, 20112#20121
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