Biodata

Name	Dr. R. Prasada Rao 
Designation	Programme Coordinator (Scientist D)
Educational qualification	**Ph.D.** in Physics , Indian Institute of Technology Madras, Chennai **M.Sc.** in Physics, Andhra University, Vishakapatnam
Research area	Synthesis of material for **Energy storage** devices (**all-solid-state batteries, Li-ion, Li-Sulfur, Li-air, AL-air, redox flow, Na-batteries)** and fabrication, Development of new materials for battery applications, Structural studies of electrolyte, cathode and anode materials using **X-ray and neutron diffraction** studies, **Atomistic simulations** of electrolyte, cathode and anode materials
Research and admistrative employment	2014-2018 : **Research Fellow,** Dept. of Materials science and Engineering, NUS, Singapore. 2012-2014 :**Senior Research Scientist**, Contour Energy systems Pt. Ltd., Singapore. 2007-2012 :**Research Fellow,** Dept. of Materials science and Engineering, NUS, Singapore. 2005-2007 : **Lecturer**, Vellore Institute of Technology, Vellore
Recognised Awards/Honors/Fellow	• Associate Fellow of ANDHRA PRADESH AKADEMI OF SCIENCES • ITS (International Travel Support) , DTS recipient • Visiting editor to International journal of Materials Science and nano materials • Reviewer for the most reputed journals like J. Materials Chemistry, J. Non-crystalline Solids, J. Materials Science, Materials research bulletin, Physical Chemistry Chemical Physics, J. Alloys and compounds, Solid State Ionics, RSC Advances, Electrochemica Acta, Inorganic chemistry, etc., • Elected member of Electrochemical Society, Singapore • Member of Materials Society of Indonesia • Member of Materials Research Society of India • Served as elected honorary auditor during 2009-2010, 2012-2013 for Materials Research Society Singapore. • Conferences organized: ICRAM-2012, ACSSI-2014 • Winner of 5 best poster awards in International conferences.
Projects	Ongoing: 1) Centre of Excellence in Rechargeable Battery Technology (PN/SP/075) (DoS: 13.09.2019 and DoC: 12.09.2024) 2) Development of aluminium based reserve batteries (PN/TS/017) (DoS: 29.06.2020, DoC; 28.06.2022)

Publications/Patents (**Past 5 years**)	1) R. M. Patil, D. R. Nagapure, G. H. Chandra, **R. Prasada Rao**,(2020) "Impact of Antisite Defect Complex on Optical and Electrical Properties of $Ag_2ZnSnSe_4$ Thin Films" Physica Status Solidi (A) 217 (8), 1900752(**I.F. 1.28**) 2) **R Prasada Rao**, Xin Zhang, Kia Chai Phuah, Stefan Adams (2019) "Mechanochemical synthesis of fast sodium ion conductor $Na_{11}Sn_2PSe_{12}$ enables first sodium–selenium all-solid-state battery" Journal of Materials Chemistry A, 7(36), 20790-20798 (**IF 11.301**) 3) R. M. Patil, D. R. Nagapure, G. Hema Chandra, **R. Prasada Rao**(2020) "Impact of Antisite Defect Complex on Optical and Electrical Properties of $Ag_2ZnSnSe_4$" Thin Films, Physica Status Solidi (a) 217 (8), 1900752. **(I.F. 3.729**) 4) GS Shinde, R Gond, M Avdeev, CD Ling, **RP Rao**, S Adams, P Barpanda (2019) "Revisiting the layered $Na_3Fe_3(PO_4)_4$ phosphate sodium insertion compound: structure, magnetic and electrochemical study". Materials Research Express, 7 (1), 014001. (**I.F. 1.41**) 5) **R Prasada Rao**, Haomin Chen, Stefan Adams(2019) "Stable Lithium Ion Conducting Thiophosphate Solid Electrolytes Lix(PS_4)yXz (X = Cl, Br, I)" Chemistry of Materials, 31(21), 8649-8662. (**IF 10.159**) 6) **RP Rao**, S Adams, 2018, "Performance enhancement of lithium-polysulphide batteries by atomic layer deposition of lithium tantalate on sulphide solid electrolytes" Solid State Ionics 323, 97-104 (**IF. 2.354**) 7) A Dayamani, GS Shinde, A Chaupatnaik, **RP Rao**, S Adams, P Barpanda (2018) "Electrochemical and diffusional insights of combustion synthesized $SrLi_2Ti_6O_{14}$ negative insertion material for Li-ion Batteries" Journal of Power Sources 385, 122-129 (**IF 7.4575**) 8) R Gond, **RP Rao**, V Pralong, OI Lebedev, S Adams, P Barpanda (2018) "Cubic Sodium Cobalt Metaphosphate [$NaCo(PO_3)_3$] as a Cathode Material for Sodium Ion Batteries" Inorganic chemistry 57 (11), 6324-6332 (**IF. 4.7**) 9) DDR Nagapure, R. M. Patil, G. Hema Chandra, M A. Sunil, YP V. Subbaiah, M. Gupta, **R Prasada Rao** (2018) "Growth and characterization of Ge-substituted $Cu_2ZnSnSe_4$ thin films" Materials Science in Semiconductor Processing, 87, 77-85. (**I.F. 2.82**) 10) **R. Prasada Rao**, Haomin Chen, Lee Loong Wong, Stefan Adams (2017) "$Na_{3+x}M_xP_{1-x}S_4$ (M= Ge^{4+}, Ti^{4+}, Sn^{4+}) Enables High Rate All-Solid-State Na-ion

	Batteries $Na_{2+\ 2\delta}\ Fe_{2-\delta}\ (SO_4)_3|Na_{3+\ x}M_xP_{1-x}S_4\ Na_2Ti_3O_7$" Journal of Materials Chemistry A, 5, 3377-3388. (**IF. 11.301**)
	11) K. P. Rao, Y. K. Devi, J. Suryachandram, **R. Prasada Rao**, J. N. Behera, (2017) "A Dense I^1O^3 Hybrid Superhydrophobic Network, Pb(H-BTMB), Exhibits Selectivity toward CO_2 Gas Sorption" Inorganic Chem., 56, 11184–11189.(**IF. 4.7**)
	12) S. Ghosh, A. D. Mani, B. Kishore, N. Munichandraiah, **R. Prasada Rao**, L. L. Wong, S. Adams, P. Barpanda (2017) "Autocombustion Synthesis of Nanostructured $Na_2Ti_6O_{13}$ Negative Insertion Material for Na-Ion Batteries: Electrochemical and Diffusion Mechanism" Journal of The Electrochemical Society, 164, A1881-A1886. (**IF 3.662**)
	13) D. R. Nagapure, R. M. Patil, G. S. Mary, A. S. Maligi, V. S. Yerva, M. Gupta, **R. Prasada Rao** (2017) "Low temperature crystallization of $Cu_2ZnSnSe_4$ thin films" Journal of Materials Science: Materials in Electronics, 28(23), 18244–18253. (**IF 2.019**)
	14) E. Ballem, A. Azeem, **R. Prasada Rao**, H. Divi (2017) "Structural and luminescent studies of erbium-doped $CaZrO_3$ green-emitting nanophosphors" Luminescence (The journal of Biological and chemical luminescence) 32 (7), 1246-1251. (**IF 1.452**)
	15) P. Senthil Kumar, A. Sakunthala, **R. Prasada Rao**, S. Adams, B.V.R. Chowdari, M.V. Reddy (2017) "Layered $Li_{1+x}(Ni_{0.33}Co_{0.33}Mn_{0.33})O_2$ cathode material prepared by microwave assisted solvothermal method for lithium ion batteries" Materials Research Bulletin, 93, 381-390. (**IF 3.662**)
	16) B Evangeline, P Abdul Azeem, **R Prasada Rao**, G Swati, D Haranath,(2017) "Structural and luminescent features of cerium doped CaZrO 3 blue nanophosphors" J. Alloys and Compounds, 705, 618-623. (**IF 3.779**)
	17) G Swapna Mary, Dipak Ramdas Nagapure, Rhishikesh Mahadev Patil, G Hema Chandra, M Anantha Sunil, **R Prasada Rao**, Mukul Gupta, YP Venkata Subbaiah, (2016) "Growth and characterization of $Cu_2ZnGeSe_4$ thin films by selenization of multiple stacks (Cu/Se/ZnSe/Se/Ge/Se) in high vacuum" Vacuum, 131, 264-270. (**IF 2.067**)
	18) ZF Yow, YL Oh, W Gu, **R Prasada Rao**, S Adam, (2016) "Effect of Li^+/H^+ exchange in water treated Ta-doped $Li_7La_3Zr_2O_{12}$" Solid State Ionics, 292, 122-129. (**IF 2.354**)
	19) **R Prasada Rao**, S Adams (2016) "Membranes for

	rechargeable lithium Sulphur semi-flow batteries" J. Materials Science, 51 (11), 5556-5564. (**IF 3.445**) 20) **R. Prasada Rao**, JM Yuen, S Adams, (2016) "Rechargeable lithium semi-flow battery using $Li_7P_3S_{11}$" Solid State Ionics 288, 253-256. (**IF 2.354**) 21) D. Safanama, N. Sharma, **R. Prasada Rao**, H. E. A. Brand, and S. Adams, (2016) "Structural evolution of NASICON-type $Li_{1+x}Al_xGe_{2-x}(PO_4)_3$ using in situ synchrotron X-ray powder diffraction", Journal of Materials Chemistry A, 4 (20), 7718-7726. (**IF 11.301**) 22) **R. Prasada Rao**, W. Gu, N. Sharma, V. K. Peterson, M. Avdeev, S. Adams, (2015) "In situ Neutron Diffraction Monitoring of $Li_7La_3Zr_2O_{12}$ formation: Towards a Rational Synthesis of Garnet Solid Electrolytes" Chemistry of materials, 27, 2903-2910. (**IF 10.159**) 23) M.V. Reddy, Neeraj Sharma, S. Adams, **R. Prasada Rao**, V. K. Peterson, B.V.R. Chowdari, (2015), "Evaluation of undoped and M-doped TiO_2, where M=Sn, Fe, Ni/Nb, Zr, V and Mn for lithium-ion battery applications prepared by the molten-salt method", RSC Advances, 5 (37), 29535-29544. (**IF 2.936**) 24) W. Gu, M.A. Lang, M. Ezbiri, **R. Prasada Rao**, M. Avdeev, S. Adams (2015)," Effects of penta and trivalent dopants on structure and conductivity of $Li_7La_3Zr_2O_{12}$" Solid State Ionics, 274, 100-105. (**IF 2.354**) 25) **R. Prasada Rao**, M.V. Reddy, S. Adams, B.V.R. Chowdari (2015), "Carbothermal method of Preparation, temperature dependent structural studies and electrochemical performance of $LiFePO_4$" Materials Research Bulletin, 66, 71–75. (**IF 3.355**)
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