

Faculty Profile

Name: B E Prasad

Designation: Assistant Professor

Department: Applied Sciences and Humanities (Chemistry)

Email: prasadbe.rvitm@rvei.edu.in

Research Focus

Solid State and Materials Chemistry

- Synthesis and Characterization of Inorganic Materials
 - Solid state electrolytes for Li-ion batteries
 - Layered metal oxides, sulfides and chalcogenides for sensing applications

Technical skills

Powder X-ray Diffraction (PXRD), Infrared (IR) spectroscopy, Thermogravimetric analysis (TGA), Scanning electron Microscope (SEM), Galvanostat/Potentiostat (EG&G, CHI), UV-VIS-NIR, Ion chromatography (IC), Rietveld refinement (TOPAS, GSAS, Full-prof)

Solid-state synthesis of inorganic materials through hydrothermal, solvothermal, co-precipitation, electrochemical, high pressure, oxygen autoclave and high temperature ceramic routes.

Academic Qualifications

Ph.D - (Chemistry). Bangalore University, Karnataka, India

MSc - Chemistry with specialization in Inorganic Chemistry, Bangalore University, Karnataka, India,

BSc - In Science with Chemistry, Physics and Mathematics as major subjects, Bangalore University, Karnataka, India.

Professional Experience

S. No	Institute/College/Industry	Job Title	Duration (From- To)
1	RV Institute of Technology and Management	Assistant Professor	15 th Sep 2020 – Till date
2	Dept. of Chemistry, Materials Innovation Factory, University of Liverpool, Liverpool, UK	Research Associate	Jan 2019 – June 2020
3	Max Planck Institute for Chemical Physics of Solids, Dresden, Germany	Visiting Scientist/ Research Scientist	April 2014 – Dec 2018
4	Jawaharlal Nehru Centre for Advanced Scientific Research	Research Associate	August 2012 – Feb 2014

R & D Grants

S No.	Title of the project	Funding agency	Amount (Rs)	Period
1.	Inorganic Solid-State Electrolytes for Li-ion Batteries: Synthesis, Characterization and Conductivity Measurement	SERB (ANRF)	21,21,900	October 2022 – January 2025

Publications

1. M. Rashmi, Samrat D, X. Ma, S. Pillai, T. N. Ahipa, **B. E. Prasad** and K. Sureshkumar, Electrochemical sensing of Cr(VI): Leveraging the copper electrode by copper chromium interaction. J Solid State Electrochem. 2025, 29, 3859.
2. C. J. Hargreaves, M. W. Gaultois, L. M Daniels, E. J. Watts, V. A. Kurlin, M. Moran, Y. Dang, R. Morris, A. Morscher, K. Thompson, M. A. Wright, **B. E. Prasad**, F. Blanc, C. M Collins, C. A. Crawford, B. B Duff, J. Evans, J. Gamon, G. Han, B. T Leube, H. Niu, A. J. Perez, A. Robinson, O. Rogan, P. M. Sharp, E. Shoko, M. Sonni, W. J. Thomas, A. Vasylenko, L. Wang, M. J. Rosseinsky and M. S. Dyer, ‘A database of experimentally measured lithium solid electrolyte conductivities evaluated with machine learning’ npj Comput. Mater. 2023, 9, 9.
3. W. Schnelle, **B. E. Prasad**, M. Jansen, S. V. Streltsov, I. I. Mazin, ‘Magnetic and electronic ordering phenomena in the Ru₂O₆-layer honeycomb lattice compound AgRuO₃’ Phy. Rev.B 2021, 103, 214413.

4. D. Takegami, D. Kasinathan, K. K. Wolff, S. G. Altendorf, C. F. Chang, K. Hoefer, A. Melendez-Sans, Y. Utsumi, F. Meneghin, T. D. Ha, C. H. Yen, K. Chen, C. Y. Kuo, Y. F. Liao, K. D. Tsuei, R. Morrow, S. Wurmehl, B. Büchner, **B. E. Prasad**, M. Jansen, A. C. Komarek, P. Hansmann and L. H. Tjeng, 'Charge-transfer energy in iridates: A hard x-ray photoelectron spectroscopy study' *Phy. Rev.B* 2020, 102, 045119,
5. **B. E. Prasad**, S. Sadhukhan, Th. Hansen, C. Felser, S. Kanungo and M. Jansen, 'Synthesis, crystal and magnetic structure of the spin-chain compound Ag_2RuO_4 ' *Phy. Rev.Mater* 2020, 4, 024418.
6. G. S. Thakur, **B. E. Prasad**, T. Doert, Y. Hsin Su, Y. Sun, C. Felser and M. Jansen, 'Na₂Bi₅AuO₁₁ revisited, *Mater. Res. Bull.* 2019, 119, 110534.
7. **B. E. Prasad**, T. Doert, C. Felser and M. Jansen, 'On $J_{\text{eff}} = 0$ ground state iridates(V):Tracking residual temperature-independent paramagnetism in new Bi₂NaIrO₆' *Chem. Eur. J.*, 2018, 24, 16762.
8. **B. E. Prasad**, H. Reuter, W. Schnelle, C. Felser and M. Jansen 'Circumventing the perovskite pattern: linear ruthenate(V) polyoxoanions in Bi₂NaRuO₆' *Solid State Sci.* 2018, 82, 52.
9. **B. E. Prasad**, S. Kanungo, M. Jansen, A. C. Komarek, B. Yan, P. Manuel and C. Felser, 'AgRuO₃, a Strongly Exchange Coupled Honeycomb Compound Lacking Long Range Magnetic Order' *Chem. Eur. J.* 2017, 23, 4680.
10. **B. E. Prasad**, J. Nuss, C. Felser and M. Jansen, 'Hg₄O₃[ReO₄]₂, Featuring a 2D Polycationic Framework [Hg₄O₃]²⁺ with Tetrahedral Rhenate(VII) Anions Embedded' *Z. Anorg. Allg. Chem.* 2016, 642, 1359.
11. **B. E. Prasad**, P. Kazin, A. C. Komarek, C. Felser, and M. Jansen, 'β-Ag₃RuO₄, a Ruthenate(V) Featuring Spin Tetramers on a Two-Dimensional Trigonal Lattice' *Angew. Chem. Int. Ed.* 2016, 55, 4467.
12. M. B. Sreedhara, **B. E. Prasad**, Monali Moirangthem, R. Murugavel and C. N. R. Rao, 'Few-layer species of the Aurivillius family of oxides and layered metal-organic compounds' *J Solid State Chem.* 2015, 224, 21.
13. U. Gupta, B. G. Rao, U. Maitra, **B. E. Prasad** and C. N. R. Rao 'Visible-light-induced generation of H₂ by nanocomposites of few-layer TiS₂ and TaS₂ with CdS nanoparticles' *Chem. Asian J.* 2014, 9, 1311.
14. **B. E. Prasad** and P. Vishnu. Kamath 'Electrodeposition of dicalcium phosphate dihydrate coatings on stainless steel substrates' *Bull. Mater. Sci.* 2013, 36, 475.

15. T N Ramesh, **B. E. Prasad**, AmreenTaj, K. Pallavi, P. Sadanada Maiya, M. Jayaramu and S. Sreenivasa, 'Thermal evolution studies of calcium hydroxide' National Conference on Challenges and opportunities for chemical sciences in 21st century, 2013, Pages 24-29. (ISBN: 978-81-923301-9-8).
16. **B. E. Prasad**, P. Vishnu Kamath and S. Ranganath 'Electrodeposition of ZnO coatings from aqueous Zn(NO₃)₂ bath: Effect of Zn concentration, deposition temperature and time on orientation' J. Solid State Electrochem. 2012, 16, 3715.
17. **B. E. Prasad**, P. Vishnu. Kamath and K. Vijayamohanan 'Anion exchange reaction potentials as approximate estimates of the relative thermodynamic stabilities of Mg/Al layered double hydroxides Containing Different Anions' Langmuir, 2011, 27, 13539.
18. **B. E. Prasad**, M. Dinamani, P. Vishnu Kamath and S. H. Mehta 'Hexacyanoferrate(III) as an electroactive probe for the investigation of the interlayer basicity of the layered double hydroxide (LDH) of Mg with Al' J. Colloid and Inteface Sci. 2010, 348, 216.
19. **B. E. Prasad** and P. Vishnu Kamath 'Electrochemical synthesis of ZnO coatings from water-isopropanol mixed baths:control over oriented crystallization' J. Solid State Electrochem. 2010, 14, 2083.
20. **B. E. Prasad**, P. Vishnu Kamath and Sarala Upadhya 'Electrochemical synthesis of macroporous oxide coatings on stainless-steel substrates' J. Am. Cerm. Soc. 2008, 91, 3870.

Fellowships awarded

Council of Scientific and Industrial Research, Govt. of India, SRF, April 2010 – July 2012.
University Grants Commission Govt. of India, JRF (Project), July 2007- March 2010.

Presentations and Workshops

1. Winter School on chemistry and physics of materials, JNCASR Bangalore, India 30th Nov- 5th Dec 2009.
2. Powder diffraction methods, 21st – 25th September 2015, MPICPfS, Dresden, Germany.