Curriculum Vitae

Dr. H. Vignesh Babu, *MSc PhD*

Assistant Professor

Department of Applied Sciences and Humanities - Chemistry

National Institute of Foundry and Forge Technology (NIFFT)

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Professional Experience

- Jun 2019 onwards, Assistant Professor, NIFFT, Ranchi
- Feb-Jun 2019, Assistant Professor, KLEF (Deemed to be University), Hyderabad.
- 2018-2019, Senior Teaching Assistant, IIT Dharwad, Karnataka.
- 2014-2017, Marie Curie Amarout Postdoctoral Researcher, IMDEA Materials Institute, Madrid, Spain
- 2006-2008, Research Executive, Orchid Chemicals and Pharmaceuticals Ltd, Chennai

Education

PhD, Chemistry, University of Hyderabad – A Central University, Hyderabad, *2014*

MSc. Chemistry, Madurai Kamaraj University, Madurai, *2006*

BSc. Chemistry, The Gandhigram Rural Institute – Deemed University, Dindigul, *2004*

Academic Achievements

- Awarded *Marie Curie Amarout Fellowship* for Post-Doctoral Research.
- Qualified CSIR – JRF NET *2008* and GATE *2006*.
- *Maveeran Sundaralingam Endowment Scholarship* was awarded for having secured *First Rank* in MSc. Chemistry.
- *Professor Kaushal Kishore Memorial Fellowship* was awarded to carry out a summer project at Department of Inorganic and Physical Chemistry, *Indian Institute of Science (IISc)*, Bangalore, India.
- *Sri. L. K. B. Lagumiah Gold Medal* was awarded for having secured *First Rank* in BSc. Chemistry.

Research Interest

- Solid polymer electrolytes for lithium-ion batteries
- Flame retardant materials
- Polymer composites
- Covalent organic framework
- Catalyst for the conversion of CO_2 into hydrocarbon fuels
- Bio-based Materials

Publications

1. S. Saravanan, **H. Vignesh Babu** and S. Muthusubramanian, Tandem ring opening and oximation of Ethyl 3-aroyl-1-cyano-4-hydroxy-2,4,6-triarylcyclohexane carboxylate by hydroxylamine, ***Synthetic Communications***, **2007**, *37*, 3635-3648.

2. **H. Vignesh Babu** and K. Muralidharan, Zn(II), Cd(II) and Cu(II) complexes of 2,5-bis{N–(2,6–diisopropylphenyl)iminomethyl}pyrrole: synthesis, structures and their high catalytic activity for efficient cyclic carbonate synthesis, ***Dalton Transactions***, **2013**, *42*, 1238-1248.

3. **H. Vignesh Babu** and K. Muralidharan, Polyethers with phosphate pendant groups by monomer activated anionic ring opening polymerization: Syntheses, characterization and their lithium-ion conductivities, ***Polymer***, **2014**, *55*, 83-94.

4. **H. Vignesh Babu** and K. Muralidharan, Versatile metal complexes of 2,5-bis{N-(2,6-diisopropylphenyl)iminomethyl}pyrrole for epoxide-CO_2 coupling and ring opening polymerization of ε-caprolactone, ***RSC Advances***, **2014**, *4*, 6094-6102.

5. R. K. Kottalanka, A. Harinath, J. Bhattacharjee, **H. Vignesh Babu** and T. K. Panda, Bis(phosphinoselenoicamides) as Versatile chelating ligands for alkaline earth metal (Mg, Ca, Sr and Ba) complexes: Syntheses, structure and ε-lactone polymerization, ***Dalton Transactions***, **2014**, *43*, 8757-8766.

6. **H. Vignesh Babu**, B. Srinivas, K. P. Kumar and K. Muralidharan, Polymerization behavior of butyl bis(hydroxymethyl)phosphine oxide: Phosphorus containing polyethers for Li–ion conductivity, ***Journal of Chemical Sciences,*** **2015**, *127*, 635–641.

7. **H. Vignesh Babu,** B. Srinivas and K. Muralidharan, Design of polymers with an intrinsic disordered framework for Li-ion conducting solid polymer electrolytes, ***Polymer,* 2015,** *75*, 10-16.

8. Y. Liu, **H. Vignesh Babu,** J. Zhao, A. Goñi-Urtiaga, R. Sainz, R. Ferritto, M. Pita and D-Y. Wang, Effect of Cu-doped graphene on the flammability and thermal properties of epoxy composites, ***Composites Part B: Engineering,* 2016,** *89,* 108-116.

9. X. Zhao, **H. Vignesh Babu**, J. Llorca and D-Y. Wang, Impact of halogen-free flame retardant with varied phosphorus's chemical surrounding on the properties of diglycidyl ether of bisphenol-A type epoxy resin: synthesis, fire behaviour, flame-retardant mechanism and mechanical properties, ***RSC Advances***, **2016,** *6*, 59226-59236.

10. N. Wang, L. Hu, **H. Vignesh Babu**, J. Zhang and Q. Fang, Effect of tea saponin based intumescent flame retardant on thermal stability, mechanical property and flame retardancy of natural rubber composites, ***Journal of Thermal Analysis and Calorimetry***, **2017**, *128*, 1133–1142.

11. D. J. Liao, Q. K. Xu, R.W. McCabe, **H. Vignesh Babu**, X.P. Hu, N. Pan, D-Y Wang and T.R. Hull, Ferrocene-based nonphosphorus copolymer: synthesis, high-charring mechanism, and its application in fire retardant epoxy resin, ***Industrial & Engineering Chemistry Research***, **2017**, *56*, 12630-12643.

12. Z. Li, A. J. González, **H. Vignesh Babu** and D-Y. Wang, Covalent assembly of MCM-41 nanospheres on graphene oxide for improving fire retardancy and mechanical property of epoxy resin, ***Composites Part B: Engineering***, **2018**, *138*, 101-112.

13. Z. Li, S. I. M. Lira, L. Zhang, D. F. Expósito, **H. Vignesh Babu** and D-Y. Wang, Bio-inspired engineering of boron nitride with iron-derived nanocatalyst toward enhanced fire retardancy of epoxy resin, ***Polymer Degradation and Stability***, **2018**, *157*, 119-130.

14. **H. Vignesh Babu**, M. G. M. Bai, and M. R. Rao, Functional π-Conjugated Two-dimensional Covalent Organic Frameworks, ***ACS Applied Materials & Interfaces***, **2019**, *11*, 11029-11060.

Patent

1. U. P. Senthil kumar, S. Mohan and **H. Vignesh Babu**, Process for the preparation of carbapenem antioboitic, ***US Patent***, US 8293924B2, **2012**.

Book Chapter

1. **H. Vignesh Babu,** C. Coluccini and D-Y. Wang, Functional layered double hydroxides and their use in fire retardant polymeric materials, Chapter 8, Novel fire retardant polymers and composite materials: Technological advances and commercial applications, Elsevier, Imprint: Woodhead Publishing, UK, **2017**, 201-238.

Poster/Oral Presentations

1. Presented a poster on "Synthesis and properties of novel phosphorous containing polyethers" at **Frontiers in Chemical Sciences** (**FICS – 2010**), Department of Chemistry, Indian Institute of Technology Guwahati on Dec 3-4, 2010.

2. Presented a poster on "Synthesis and properties of novel phosphorous containing polyethers" at **In-house symposium**, School of Chemistry, University of Hyderabad on Feb 7-8, 2011.

3. Presented a poster on "Lithium-ion conducting phosphorus containing polyethers: Synthesis, characterization and their ion conducting properties" at **Modern Trends in Inorganic Chemistry** (**MTIC-2012**), University of Hyderabad, on Feb 13-14, 2012.

4. Presented a talk and poster on "Synthesis of cyclic carbonates from atmospheric pressure carbon dioxide using Zn(II)iminomethylpyrrolyl complex as catalyst" on **In-house symposium**, School of Chemistry, University of Hyderabad on Mar 03-04, 2012.

5. Presented a poster in '**National Symposium on Frontiers in Organic Chemistry**' on "Zn(II), Cd(II) and Cu(II) complexes of 2,5-bis{N–(2,6-diisopropylphenyl)imino methyl}pyrrole: Synthesis, structures and their high catalytic activity for efficient cyclic carbonate synthesis" held at University of Hyderabad on Oct 11-12, 2013.

6. Presented a poster in '**AP Science Congress - 2013**' on "Efficient cyclic carbonate synthesis from epoxides and carbon dioxide at atmospheric pressure" held at University of Hyderabad on Nov 14-16, 2013.

Personal Details

Date of Birth	: May 27, 1984
Nationality	: Indian
Marital Status	: Married
Permanent address	: Plot No. 51, Pallivasal Street First floor, Nagal Nagar Dindigul - 624003, Tamil Nadu, India.