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Personal Details

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Educational Qualification : M.Sc. B.Ed., NET, Ph.D.
Professional experience : Nine years of service as University teacher
Research Experience : Twelve years
Publications : **14 Publications in peer reviewed**



International Journals

Research areas

1. Development of eco- friendly electrode and electrolyte materials for realizing Lithium ion, Magnesium ion and Lithium sulphur batteries with excellent electrochemical performance
2. Functionalized carbon nanostructures for battery and supercapacitor applications.
3. Realization of efficient rechargeable batteries and super-capacitors to meet the day by day increasing energy storage requirements

List of Journal Publications

1. **Anilkumar K. M**, C.M. Ashraf, B. Jinisha, M. Manoj, V.S. Pradeep, S. Jayalekshmi, Acid Washed, Steam Activated, Coconut Shell Derived Carbon for High Power Supercapacitor Applications, J. Electrochem. Soc. 165 (2018) A900–A909. doi:10.1149/2.0491805jes.
2. J. John, M. Manoj, **Anilkumar K. M**, V.S. Pradeep, S. Jayalekshmi, Lithium-enriched polypyrrole as a prospective cathode material for Li-ion cells, Ionics (Kiel). (2018) 1–10. doi:10.1007/s11581-017-2398-x.
3. **Anilkumar K. M**, B. Jinisha, M. Manoj, V.S. Pradeep, S. Jayalekshmi, Layered sulfur/PEDOT:PSS nano composite electrodes for lithium sulfur cell applications, Appl. Surf. Sci. 442 (2018) 556–564. doi:10.1016/j.apsusc.2018.02.178.
4. M. Manoj, M. Jasna, **Anilkumar K. M**, A. Abhilash, B. Jinisha, V.S. Pradeep, S. Jayalekshmi, Sulfur-polyaniline coated mesoporous carbon composite in combination with carbon nanotubes interlayer as a superior cathode assembly for high capacity lithium-sulfur cells, Appl. Surf. Sci. 458 (2018) 751–761. doi:10.1016/j.apsusc.2018.07.113.

5. M. Manoj, **Anilkumar K. M**, B. Jinisha, S. Jayalekshmi, Polyaniline–Graphene Oxide based ordered nanocomposite electrodes for high-performance supercapacitor applications, *J. Mater. Sci. Mater. Electron.* 0 (2017) 1–8. doi:10.1007/s10854-017-7292-9.
6. **Anilkumar K. M**, Manoj. M, Jinisha. B, Pradeep V S, S. Jayalekshmi, Mn₃O₄ /reduced graphene oxide nanocomposite electrodes with tailored morphology for high power supercapacitor applications, *Electrochim. Acta.* 236 (2017) 424–433. doi:10.1016/j.electacta.2017.03.167.
7. **Anilkumar K. M**, B. Jinisha, M. Manoj, S. Jayalekshmi, Poly (ethylene oxide) (PEO) - Poly (vinyl pyrrolidone) (PVP) blend polymer based solid electrolyte membranes for developing solid state magnesium ion cells, *Eur. Polym. J.* (2017). doi:10.1016/j.eurpolymj.2017.02.004.
8. Jinisha. B, **Anilkumar K. M**, Manoj. M, Pradeep V.S, S. Jayalekshmi, Development of a novel type of solid polymer electrolyte for solid state lithium battery applications based on lithium enriched poly (ethylene oxide) (PEO)/poly (vinyl pyrrolidone) (PVP) blend polymer, *Electrochim. Acta.* 235 (2017) 210–222. doi:10.1016/j.electacta.2017.03.118.
9. M. Rajive Tomy, **Anilkumar K. M**, P.B. Anand, S. Jayalekshmi, Effect of annealing on structural and electrical properties of the Li–Mn–O thin films, prepared by high frequency RF magnetron sputtering, *J. Phys. Chem. Solids.* 72 (2011) 1251–1255. doi:10.1016/j.jpcs.2011.07.018.
10. M. Rajive Tomy, , **Anilkumar K. M**, P.B. Anand, S. Jayalekshmi, Effect of annealing on the electrochemical properties of the Li-Mn-O thin films, prepared by high frequency RF magnetron sputtering *Journal of Physics and Chemistry of Solids*, Volume 73, Issue 4, April 2012, Pages 559-563
11. Rajive Tomy M, Anil Kumar K M and S Jayalekshmi, A Cost effective, fully automated electrochemical Characterization setup for thin film LI-ion battery research, *Journal of Instrument Society of India*, Vol 41, No. 2, June 2011
12. P.B. Anand, K. Hasna, **Anilkumar K. M**, S. Jayalekshmi, On the structural and optical properties of gold–polyaniline nanocomposite synthesized via a novel route, (n.d.). doi:10.1002/pi.4262.
13. A.M. Sajimol, P.B. Anand, **Anilkumar K. M**, S. Jayalekshmi, Exceptionally good, transparent and flexible FeS₂/poly(vinyl pyrrolidone) and FeS₂/poly(vinyl alcohol) nanocomposite thin films with excellent UV-shielding properties, *Polym. Int.* (2013). doi:10.1002/pi.4348.
14. V. Sreevalsa, P. Jeeju, M. Sajimol Augustine, **Anilkumar K. M**, S. Jayalekshmi, L-Histidine-modified biocompatible zinc oxide nanocrystals, *J. Exp. Nanosci.* 8 (2013) 7–8. doi:10.1080/17458080.2011.624553.

CONFERENCE PUBLICATIONS

1. A novel method for realizing high capacity LiFePO₄ -based Lithium-ion cells
Anil Kumar K.M, Rajive Tomy, Bibin John, Priya Carol, Jayalekshmi S, Gouri C, Prathapachandra KurupM.R (ISRS 2010 at IIT Chennai on Dec 20-22 2010)

2. “Fully automated charge –discharge cycling and cyclic voltametry measurements setup using Keithley 2400 and LabVIEW for Lithium-ion battery research ”, Rajive Tomy, Anil Kumar. K.M, S. Jayalekshmi, VI-Manthra 2009 held on 06 November 9, 2009 at Chennai (Placed among top five papers)
3. “Electronic bandstructure of Olivine Lithium Nickel Phosphate from reflectance spectrum and its modification upon multiwalled carbon nanotube addition, K.Ravindranath, Anil Kumar. K.M, Rajive Tomy, S. Jayalekshmi, Proc. Cochin Nano 2009, held at Cochin during 3rd to 7th of January 2009.
4. “Flexible Solid Electrolyte Sheets for Lithium ion cells” Anil Kumar K M, Jinisha B., Manoj M , S Jayalekshmi at the international conference on energy harvesting storage and conversion (ICEEE-2015) Conducted by Department of Physics , Cochin Univesristy of Science & Technology(CUSAT). Kochi
5. “Will Mg-ion cells serve as substitute for Li-ion cells?” Anil Kumar K M, Jinisha B., Manoj M , S Jayalekshmi at the international conference on Contemporary Advances of Science & Technoligy (IC-CAST 2015) Conducted by Department of Physics , Banaras Hindu University, Varanasi ,India
6. “MWNT/GO/rGO/Graphene- Ni-doped Mn₃O₄ Composite Electrode material for Supercapacitors applications” Anil Kumar K M, Jinisha B., Manoj M , S Jayalekshmi at the National conference on Carbon Materials (NCCM 2015) Conducted by NPL , New Delhi ,India
7. Lithium enriched solid polymer blend electrolytes based on poly (vinyl pyrrolidone) for energy storage application, Jinisha B, Anil Kumar K M, Manoj M , S Jayalekshmi, National Conference on Carbon Materials, *NCCM 2015*, IIC, New Delhi, India.
8. Lithium enriched solid polymer blend electrolytes based on poly (vinyl pyrrolidone) using different lithium salts for energy storage applications, Jinisha B, Anil Kumar K M, Manoj M , S Jayalekshmi, International Conference on Materials for the Millennium (*MATCON 2016*) Dept. of Applied Chemistry, Cochin University of Science and Technology, Cochin 22, Kerala.
9. Studies on a prospective polymer blend electrolyte material for developing pollution free, solid state Li-ion cells, *28th Kerala Science Congress*, Jinisha B, Anil Kumar K M, S Jayalekshmi Calicut University Campus, Thenhippalam, Malappuram.
10. Polyethylene oxide (PEO) / polyvinyl alcohol (PVA) complexed with lithium perchlorate (LiClO₄) as a prospective material for making solid polymer electrolyte films, Jinisha B, Anil Kumar K M, Manoj M , S Jayalekshmi International Conference on Smart Engineering Materials ICSEM-2016, RV college of Engineering, Bangalore.
11. On the prospects of developing high voltage lithium ion cells using solid polymer electrolyte films, Jinisha B, Anil Kumar K M, Manoj M , S Jayalekshmi, International Conference on Advanced Materials (SCICON-2016) 19-21 December, Amritha University, Coimbatore.
- 12.** Fe₂O₃/Graphene oxide based anode materials with solid polymer electrolytes for Li-ion storage applications, Jinisha B, V.S. Pradeep, Anilkumar K M, Manoj M, and S. Jayalekshmi International Conference on Advances in Functional Materials (IC-AFM) January 6-8, 2017, Anna University, Chennai.