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List of Publications

- 1. R. Kumar, S. Mukherjee, **N. Lakshminarasimhan**, R. Shunmugam, "Unique polymer gel with magnetizable cobalt domains via photoinduced thiol-alkene hydrothiolation", *Eur. Polymer J.* 2020, 140, 110022.
- 2. G. Gupta, K. Selvakumar, **N. Lakshminarasimhan**, S. M. Senthil Kumar, M. Mamlouk, "The effects of morphology, microstructure and mixed-valent states of MnO₂ on the oxygen evolution reaction activity in alkaline anion exchange membrane water electrolysis", *J. Power Sources*, 2020, 461, 228131.
- 3. J. Pitchaimani, S. Karthikeyan, **N. Lakshminarasimhan**, S. P. Anthony, D. Moon, V. Madhu, "Reversible thermochromism of Nickel(II) complexes and single-crystal-to-single-crystal transformation", *ACS Omega*, 2019, 4, 13756-13761.
- 4. S. Michelraj, C. V. Raju, **N. Lakshminarasimhan**, S. S. Kumar, "Electrogenerated chemiluminescence of phosphate-modified polymeric carbon nitride for sensing of NADH: Role of luminophore–coreactant interactions in enhancing the signal", *J. Electrochem. Soc.* 2019, 166, H565-H572.
- 5. D. Bansal, A. Mondal, **N. Lakshminarasimhan**, R. Gupta, "Oxo-bridged Trinuclear and Tetranuclear Manganese Complexes Supported with Nitrogen Donor Ligands: Syntheses, Structures and Properties", *Dalton Trans*. 2019, 48, 7918-7927.
- 6. A. Mukhopadhyay, **N. Lakshminarasimhan**, N. Mohapatra, "Electronic, thermal and magneto-transport properties of the half-Heusler, DyPdBi", *Intermetallics*, 2019, 110, 106473.
- 7. N. Lakshminarasimhan, A. K. Nanda Kumar, S. Selva Chandrasekaran, P. Murugan, "Structure-magnetic property relations in FeNbO4 polymorphs: A spin glass perspective", *Prog. Solid State Chem.* 2019, 54, 20-30.
- 8. G. Anantharaj, **N. Lakshminarasimhan**, "Interfacial modification of photoanode|electrolyte interface using oleic acid enhancing the efficiency of dye-sensitized solar cells", *ACS Omega*, 2018, 3, 18285-18294.

- 9. B. Bagyalakshmi, M. Veera Gajendra Babu, **N. Lakshminarasimhan**, B. Sundarakannan, "Temperature-induced strain mediated magnetization changes in NiFe₂O₄/BaTiO₃ heterostructure", *Ceram. Intl.* 2018, 44, 15099-15103.
- 10. S. Sekar, J. George Muller, J. Karthikeyan, P. Murugan, **N. Lakshminarasimhan**, "Unveiling the multifunctional roles of hitherto known capping ligand oleic acid as blue emitter and sensitizer in tuning the emission colour to white in red-emitting phosphors", *Phys. Chem. Chem. Phys.* 2018, 20, 19087-19097.
- 11. A. Mukhopadhyay, **N. Lakshminarasimhan**, N. Mohapatra, "Multi-functional properties of noncentrosymmetric ternary half-Heuslers, RPdSb (R = Er, Ho)", *J. Phys. D: Appl. Phys.* 2018, 51, 265004.
- 12. P. Gurunathan, P. M. Ette, **N. Lakshminarasimhan**, K. Ramesha, "A convenient synthesis route for Co₃O₄ hollow microspheres and their application as a high performing anode in Li-ion batteries", *ACS Omega*, 2017, 2, 7647-7657.
- 13. K. Sudalai Muthu, **N. Lakshminarasimhan**, P. Perumal, "One-pot synthesis of LaFeO₃-NiFe₂O₄ nanocomposite ceramic by egg-white method and its magnetic and dielectric properties", *Solid State Sci.* 2017, 72, 33-40.
- 14. **N. Lakshminarasimhan**, S. Jayakiruba, K. Prabhavathi, "Ba2Mg(BO3)2:Bi3+-A new phosphor with ultraviolet light emission", *Solid State Sci.* 2017, 72, 1-4.
- 15. S. Jayakiruba, S. Selva Chandrasekaran, P. Murugan, **N. Lakshminarasimhan**, "Excitation-dependent local symmetry reversal in single host lattice Ba₂A(BO₃)₂:Eu₃₊ [A = Mg and Ca] phosphors with tunable emission colours", *Phys. Chem. Chem. Phys.* 2017, 19, 17383-17395.
- 16. A. Mukhopadhyay, **N. Lakshminarasimhan**, N. Mohapatra, "Magnetic and transport properties of half-Heuslers, RPdSb (R = Gd and Tb)", *J. Alloys Compds*. 2017, 721, 712-720.
- 17. M. Padmini, M. K. Kiran, **N. Lakshminarasimhan**, M. Sathish, P. Elumalai, "High-performance solid-state hybrid energy-storage device consisting of reduced graphene-oxide anchored with NiMn-layered double hydroxide", *Electrochim. Acta* 2017, 236, 359-370.
- 18. **N. Lakshminarasimhan**, D. N. Sangeetha, G. Nivetha, "Metachromasy of methylene blue due to aggregation over phosphate-modified polymeric carbon nitride", *Chem. Phys. Lett.* 2017, 675, 98-103.
- 19. C. P. Laisa, A. K. Nanda Kumar, S. Selva Chandrasekaran, P. Murugan, N. Lakshminarasimhan, R. Govindaraj, K. Ramesha, "A comparative study on electrochemical cycling stability of lithium rich layered cathode materials Li_{1.2}Ni_{0.13}M_{0.13}M_{0.13}M_{0.54}O₂ where M = Fe or Co", *J. Power Sources* 2016, 324, 462-474.
- 20. S. Jayakiruba, G. Kumar, **N. Lakshminarasimhan**, "Excitation-dependent variation in local symmetry in Ba₂Mg(BO₃)₂ evidenced by Eu₃₊ luminescent structural probe", *Solid State Sci.* 2016, 55, 121-124.

- 21. K. Subramani, **N. Lakshminarasimhan**, P. Kamaraj, M. Sathish, "Facile and scalable route to sheets-on-sheet mesoporous Ni–Co-hydroxide/reduced graphene oxide nanocomposites and their electrochemical and magnetic properties", *RSC Adv.* 2016, 6, 15941-15951.
- 22. R. Mohini, **N. Lakshminarasimhan**, "Coupled semiconductor nanocomposite g-C₃N₄/TiO₂ with enhanced visible light photocatalytic activity", *Mater. Res. Bull.* 2016, 76, 370-375.
- 23. S. Sekar, P. Arunkumar, D. Jeyakumar, **N. Lakshminarasimhan**, "White light emission in alkali metal ion co-doped single host lattice phosphor Sr₃B₂O₆:Ce₃₊, Eu₂₊, A₊ [A = Li, Na and K]", *Ceram Intl.* 2015, 41, 3497-3501.
- 24. S. Parthiban, K. S. Anuratha, S. Arunprabaharan, S. Abinesh, **N. Lakshminarasimhan**, "Enhanced dye sensitized solar cell performance using TiO₂:Nb blocking layer deposited by soft chemical method", *Ceram. Intl.* 2015, 41, 205-209.
- 25. K. S. Anuratha, **N. Lakshminarasimhan**, "Role of synthesis medium of TiO₂ nanoparticles in enhancing the open circuit voltage and efficiency in dye-sensitized solar cell", *J. Solid State Electrochem.* 2014, 18, 3407-3414.
- 26. **N. Lakshminarasimhan**, U. V. Varadaraju, "Influence of 6s2 lone pair electrons of Bi₃₊ on its preferential site occupancy in fluorapatite, NaCa₃Bi(PO₄)₃F An insight from Eu₃₊ luminescent probe", *Mater. Res. Bull.* 2014, 60, 238-241.
- 27. J. George Muller, J. Karthikeyan, P. Murugan, **N. Lakshminarasimhan**, "Influence of structural polymorphs on white light generation from orange-red-emitting BiPO4:Eu3+ phosphor by surface modification", *J. Phys. Chem. C* 2014, 118, 19308-19314.
- 28. S. Santhosh, **N. Lakshminarasimhan**, "Impedance spectroscopic studies, dielectric properties and microstructure of rutile type chromium niobate CrNbO4", *Ceram. Intl.* 2014, 40, 12129-12137.
- 29. T. Sri Devi Kumari, R. Vinith Gandhi, G. Rahul, G. Kamalanathan, T. Prem Kumar, D. Jeyakumar, **N. Lakshminarasimhan**, "Electrochemical lithium insertion behavior of FeNbO4: Structural relations and in situ conversion into FeNb2O6 during carbon coating", *Mater. Chem. Phys.* 2014, 145, 425-433.
- 30. M. P. Saradhi, **N. Lakshminarasimhan**, S. Boudin, K. V. K. Gupta, U. V. Varadaraju, B. Raveau, "Enhanced luminescence of Sr₂SiO₄:Dy₃₊ by sensitization (Ce₃₊/Eu₂₊) and fabrication of white light-emitting-diodes", *Mater. Lett.* 2014, 117, 302-304.
- 31. J. Lim, P. Murugan, N. Lakshminarasimhan, J. Y. Kim, J. S. Lee, S-H. Lee, W. Choi, "Synergic photocatalytic effects of nitrogen and niobium co-doping in TiO₂ for the redox conversion of aquatic pollutants under visible light", *J. Catal.* 2014, 310, 91-99.
- 32. W. Kim, T. Tachikawa, H. Kim, **N. Lakshminarasimhan**, P. Murugan, H. Park, T. Majima, W. Choi, "Visible light photocatalytic activities of nitrogen and platinum-doped TiO2: Synergistic effects of co-dopants", *Appl. Catal. B* 2014, 147, 642-650.

- 33. K. Sudalai Muthu, **N. Lakshminarasimhan**, "Impedance spectroscopic studies on NiFe₂O₄ with different morphologies: Microstructure vs. dielectric properties", *Ceram. Intl.* 2013, 39, 2309-2315.
- 34. N. Ilayaraja, N. Prabu, **N. Lakshminarasimhan**, P. Murugan, D. Jeyakumar, "Au-Pt graded nano-alloy formation and its manifestation in small organics oxidation reaction", *J. Mater. Chem. A* 2013, 1, 4048-4056.
- 35. **N. Lakshminarasimhan**, A. D. Bokare, W. Choi, "Effect of agglomerated state in mesoporous TiO2 on the morphology of photodeposited Pt and photocatalytic activity", *J. Phys. Chem. C* 2012, 116, 17531-17539.
- 36. P. Arunkumar, C. Jayajothi, D. Jeyakumar, **N. Lakshminarasimhan**, "Structure-property relations in hexagonal and monoclinic BiPO4:Eu₃₊ nanoparticles synthesized by polyol-mediated method", *RSC Adv.* 2012, 2, 1477-1485.
- 37. Shahid Anwar, K. Sudalai Muthu, V. Ganesh, **N. Lakshminarasimhan**, "Comparative study of electrochemical capacitive behaviour NiFe₂O₄ synthesized by different routes", *J. Electrochem. Soc.* 2011, 158, A976-A981.
- 38. **N. Lakshminarasimhan**, W. Kim, W. Choi, "Effect of the agglomerated state on the photocatalytic hydrogen production with in situ agglomeration of colloidal TiO₂ nanoparticles", *J. Phys. Chem. C.* 2008, 112, 20451-20457.
- 39. **N. Lakshminarasimhan**, U. V. Varadaraju, "Role of crystallite size on the photoluminescence properties of SrIn₂O₄:Eu₃₊ phosphor synthesized by different methods", *J. Solid State Chem.* 2008, 181, 2418-2423.
- 40. **N. Lakshminarasimhan,** U.V. Varadaraju, "Luminescence and afterglow in Sr₂SiO₄:Eu₂₊, RE₃₊ [RE = Ce, Nd, Sm and Dy] phosphors -Role of co-dopants in search for afterglow", *Mater. Res. Bull.* 2008, 43, 2946-2953.
- 41. **N. Lakshminarasimhan**, Y. Park, W. Choi, "Role of valency ordering on the visible light photocatalytic activity of BaBi_{3+0.5}Bi_{5+0.5}O₃", *Chem. Phys. Lett.* 2008, 452, 264-268.
- 42. J. S. Jang, D. J. Ham, **N. Lakshminarasimhan**, W. Choi, J. S. Lee, "Role of platinum-like tungsten carbide as cocatalyst of CdS photocatalyst for hydrogen production under visible light irradiation", *Appl. Catal. A* 2008, 346, 149-154.
- 43. **N. Lakshminarasimhan**, E. Bae, W. Choi, "Enhanced photocatalytic production of H₂ on mesoporous TiO₂ prepared by template-free method: The role of interparticle charge transfer", *J. Phys. Chem. C*, 2007, 111, 15244-15250.
- 44. **N. Lakshminarasimhan**, U.V. Varadaraju, "Luminescent host lattices, LaInO3 and LaGaO3 A reinvestigation of luminescence of d₁₀ metal ions", *Mater. Res. Bull.* 2006, 41, 724-731.

- 45. **N. Lakshminarasimhan,** U.V. Varadaraju, "White light generation in Sr₂SiO₄:Ce₃₊, Eu₂₊ phosphor under near UV excitation A novel phosphor for solid state lighting", *J. Electrochem. Soc.* 2005, 152, H152-H156.
- 46. **N. Lakshminarasimhan,** U.V. Varadaraju, "Synthesis and Eu₃₊ luminescence in new oxysilicates, ALa₃Bi(SiO₄)₃O and ALa₂Bi₂(SiO₄)₃O [A = Ca, Sr and Ba] with apatite related structure", *J. Solid State Chem.* 2005, 178, 3284-3292.
- 47. **N. Lakshminarasimhan,** U.V. Varadaraju, "Eu3+ luminescence a structural probe in BiCa4(PO4)3O, an apatite related phosphate", *J. Solid State Chem.* 2004, 177, 3536-3544.

Patents: One (Korean Patent)

W. Choi and **N. Lakshminarasimhan**, "Manufacture of mesoporous titanium dioxide photocatalyst used for production of hydrogen, involves hydrolyzing reaction solution including electrolyte and precursor, filtering, washing and drying precipitate and plasticizing product", Korean Patent, No. KR2009072745.