# Palani Balaya

List of Publications by Year
in descending order

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|---|---|---|---|
| 97<br>papers | 8,428<br>citations | 66343<br>42<br>h-index | 43889<br>91<br>g-index |
| 98<br>all docs | 98<br>docs citations | 98<br>times ranked | 9551<br>citing authors |

| # | Article | IF | Citations |
|---|---|---|---|
| 1 | The First Report on Excellent Cycling Stability and Superior Rate Capability of Na<sub>3</sub>V<sub>2</sub>(PO<sub>4</sub>)<sub>3</sub> for Sodium Ion Batteries. Advanced Energy Materials, 2013, 3, 444-450. | 19.5 | 672 |
| 2 | Fully Reversible Homogeneous and Heterogeneous Li Storage in RuO2 with High Capacity. Advanced Functional Materials, 2003, 13, 621-625. | 14.9 | 598 |
| 3 | Li-Storage via Heterogeneous Reaction in Selected Binary Metal Fluorides and Oxides. Journal of the Electrochemical Society, 2004, 151, A1878. | 2.9 | 559 |
| 4 | Fundamentals, status and promise of sodium-based batteries. Nature Reviews Materials, 2021, 6, 1020-1035. | 48.7 | 496 |
| 5 | Na2Ti3O7: an intercalation based anode for sodium-ion battery applications. Journal of Materials Chemistry A, 2013, 1, 2653. | 10.3 | 385 |
| 6 | Electrical conductivity and dielectric behaviour of nanocrystalline NiFe2O4spinel. Journal of Physics Condensed Matter, 2002, 14, 3221-3237. | 1.8 | 292 |
| 7 | Anisotropy of Electronic and Ionic Transport in LiFePO[sub 4] Single Crystals. Electrochemical and Solid-State Letters, 2007, 10, A13. | 2.2 | 287 |
| 8 | Mesoporous TiO2 with high packing density for superior lithium storage. Energy and Environmental Science, 2010, 3, 939. | 30.8 | 267 |
| 9 | Storage performance of LiFePO<sub>4</sub>nanoplates. Journal of Materials Chemistry, 2009, 19, 605-610. | 6.7 | 255 |
| 10 | Morphology controlled synthesis of LiFePO4/C nanoplates for Li-ion batteries. Energy and Environmental Science, 2010, 3, 457. | 30.8 | 243 |
| 11 | Electrochemical lithiation synthesis of nanoporous materials with superior catalytic and capacitive activity. Nature Materials, 2006, 5, 713-717. | 27.5 | 219 |
| 12 | Lithium storage in a metal organic framework with diamondoid topology â€“ a case study on metal formates. Journal of Materials Chemistry, 2010, 20, 8329. | 6.7 | 204 |
| 13 | Evidence for Interfacial-Storage Anomaly in Nanocomposites for Lithium Batteries from First-Principles Simulations. Physical Review Letters, 2006, 96, 058302. | 7.8 | 200 |
| 14 | Na2Ti6O13: a potential anode for grid-storage sodium-ion batteries. Chemical Communications, 2013, 49, 7451. | 4.1 | 194 |
| 15 | Nano-ionics in the context of lithium batteries. Journal of Power Sources, 2006, 159, 171-178. | 7.8 | 185 |
| 16 | Enhanced Potential of Amorphous Electrode Materials: Case Study of RuO<sub>2</sub>. Advanced Materials, 2008, 20, 501-505. | 21.0 | 185 |
| 17 | Ionic and electronic transport in single crystalline LiFePO4 grown by optical floating zone technique. Solid State Ionics, 2008, 179, 1683-1687. | 2.7 | 183 |
| 18 | Size effects and nanostructured materials for energy applications. Energy and Environmental Science, 2008, 1, 645. | 30.8 | 169 |

| # | Article | IF | Citations |
|---|---|---|---|
| 19 | Î±-MoO3: A high performance anode material for sodium-ion batteries. Electrochemistry Communications, 2013, 31, 5-9. | 4.7 | 162 |
| 20 | A rationally designed dual role anode material for lithium-ion and sodium-ion batteries: case study of eco-friendly Fe3O4. Physical Chemistry Chemical Physics, 2013, 15, 2945. | 2.8 | 154 |
| 21 | Synthesis of mesoporous titanium dioxide by soft template based approach: characterization and application in dye-sensitized solar cells. Energy and Environmental Science, 2010, 3, 838. | 30.8 | 98 |
| 22 | Li(MnxFe1â^'x)PO4/C (x = 0.5, 0.75 and 1) nanoplates for lithium storage application. Journal of Materials Chemistry, 2011, 21, 14925. | 6.7 | 95 |
| 23 | Enhancing the electrochemical kinetics of high voltage olivine LiMnPO4 by isovalent co-doping. Physical Chemistry Chemical Physics, 2013, 15, 17240. | 2.8 | 88 |
| 24 | NaVPO4F with high cycling stability as a promising cathode for sodium-ion battery. Energy Storage Materials, 2018, 10, 102-113. | 18.0 | 88 |
| 25 | MnCO3: a novel electrode material for supercapacitors. Journal of Materials Chemistry A, 2014, 2, 4276. | 10.3 | 86 |
| 26 | A new phenomenon in sodium batteries: Voltage step due to solvent interaction. Electrochemistry Communications, 2014, 46, 56-59. | 4.7 | 84 |
| 27 | Monoclinic Sodium Iron Hexacyanoferrate Cathode and Non-Flammable Glyme-Based Electrolyte for Inexpensive Sodium-Ion Batteries. Journal of the Electrochemical Society, 2017, 164, A1098-A1109. | 2.9 | 82 |
| 28 | Origin of Hole Selectivity and the Role of Defects in Low-Temperature Solution-Processed Molybdenum Oxide Interfacial Layer for Organic Solar Cells. Journal of Physical Chemistry C, 2012, 116, 16346-16351. | 3.1 | 76 |
| 29 | <sup>6</sup>Li MAS NMR Investigation of Electrochemical Lithiation of RuO<sub>2</sub>: Evidence for an Interfacial Storage Mechanism. Chemistry of Materials, 2009, 21, 856-861. | 6.7 | 64 |
| 30 | Introducing a 0.2 V sodium-ion battery anode: The Na2Ti3O7 to Na3â^'xTi3O7 pathway. Electrochemistry Communications, 2015, 61, 10-13. | 4.7 | 61 |
| 31 | Hollow Nanospheres and Flowers of CuS from Self-Assembled Cu(II) Coordination Polymer and Hydrogen-Bonded Complexes of N-(2-Hydroxybenzyl)-l-serine. Crystal Growth and Design, 2009, 9, 4461-4470. | 3.0 | 60 |
| 32 | Heat loss distribution: Impedance and thermal loss analyses in LiFePO4/graphite 18650 electrochemical cell. Journal of Power Sources, 2016, 328, 413-421. | 7.8 | 60 |
| 33 | Na 2 MnSiO 4 as an attractive high capacity cathode material for sodium-ion battery. Journal of Power Sources, 2017, 359, 277-284. | 7.8 | 60 |
| 34 | Improved ionic conductivity in NASICON-type Sr2+ doped LiZr2(PO4)3. Solid State Ionics, 2016, 296, 1-6. | 2.7 | 55 |
| 35 | Synthesis, characterisation and enhanced electrochemical performance of nanostructured Na<sub>2</sub>FePO<sub>4</sub>F for sodium batteries. RSC Advances, 2015, 5, 50155-50164. | 3.6 | 54 |
| 36 | Storage performance of LiFe1â€‰â^'â€‰x Mn x PO4 nanoplates (xâ€‰=â€‰0, 0.5, and 1). Journal of Solid State Electrochemistry, 2010, 14, 1755-1760. | 2.5 | 53 |

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|---|---|---|---|
| 37 | Hollow Î±-LiVOPO4 sphere cathodes for high energy Li-ion battery application. Journal of Materials Chemistry, 2011, 21, 10042. | 6.7 | 53 |
| 38 | Grain size effect on the universality of AC conductivity in SnO2. Journal of Physics and Chemistry of Solids, 2003, 64, 659-663. | 4.0 | 52 |
| 39 | Investigation of physico-chemical processes in lithium-ion batteries by deconvolution of electrochemical impedance spectra. Journal of Power Sources, 2017, 361, 300-309. | 7.8 | 50 |
| 40 | Solâ€“gel derived nanostructured Li2MnSiO4/C cathode with high storage capacity. Electrochimica Acta, 2013, 102, 290-298. | 5.2 | 49 |
| 41 | Li2MnSiO4 obtained by microwave assisted solvothermal method: electrochemical and surface studies. Journal of Materials Chemistry, 2012, 22, 21279. | 6.7 | 45 |
| 42 | Mesoporous MnO2 and Its Capacitive Behavior. Electrochemical and Solid-State Letters, 2012, 15, A57. | 2.2 | 44 |
| 43 | Multi-functional photoanode films using mesoporous TiO2 aggregate structure for efficient dye sensitized solar cells. Journal of Materials Chemistry, 2012, 22, 10873. | 6.7 | 43 |
| 44 | NASICON-type La3+substituted LiZr2(PO4)3 with improved ionic conductivity as solid electrolyte. Electrochimica Acta, 2018, 271, 120-126. | 5.2 | 43 |
| 45 | The effect of synthesis parameters on the lithium storage performance of LiMnPO4/C. Electrochimica Acta, 2013, 105, 496-505. | 5.2 | 40 |
| 46 | Charge and Discharge Processes and Sodium Storage in Disodium Pyridineâ€2,5â€Dicarboxylate Anodeâ€”Insights from Experiments and Theory. Advanced Energy Materials, 2018, 8, 1701572. | 19.5 | 40 |
| 47 | Towards Understanding Heat Generation Characteristics of Li-Ion Batteries by Calorimetry, Impedance, and Potentiometry Studies. Journal of the Electrochemical Society, 2017, 164, A2794-A2800. | 2.9 | 39 |
| 48 | Developing an O3 type layered oxide cathode and its application in 18650 commercial type Na-ion batteries. Journal of Materials Chemistry A, 2019, 7, 25944-25960. | 10.3 | 39 |
| 49 | Enhanced photocurrent and stability of organic solar cells using solution-based NiO interfacial layer. Solar Energy, 2012, 86, 3190-3195. | 6.1 | 36 |
| 50 | Dielectric, thermal, and mechanical properties of the semiorganic nonlinear optical crystal sodium p-nitrophenolate dihydrate. Journal of Applied Physics, 2000, 88, 5935-5940. | 2.5 | 35 |
| 51 | Crystallization studies of 30Li2O: 70TeO2 glass. Journal of Non-Crystalline Solids, 1993, 162, 253-262. | 3.1 | 33 |
| 52 | Lithium Storage Using Conversion Reaction in Maghemite and Hematite. Electrochemical and Solid-State Letters, 2010, 13, A132. | 2.2 | 33 |
| 53 | A comprehensive study on the electrolyte, anode and cathode for developing commercial type non-flammable sodium-ion battery. Energy Storage Materials, 2020, 29, 287-299. | 18.0 | 33 |
| 54 | Dielectric properties of 1 MeV electron-irradiated polyimide. Applied Physics Letters, 2002, 80, 640-642. | 3.3 | 32 |

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| 55 | Enhanced lithium storage and chemical diffusion in metal-LiF nanocomposites: Experimental and theoretical results. Physical Review B, 2007, 76, . | 3.2 | 32 |
| 56 | Mixed alkali effect in the 30[(1 â^' x)Li2O Â· xNa2O]: 70TeO2 glass system. Journal of Non-Crystalline Solids, 1994, 175, 51-58. | 3.1 | 31 |
| 57 | High energy density in-situ sodium plated battery with current collector foil as anode. Electrochemistry Communications, 2018, 86, 157-160. | 4.7 | 27 |
| 58 | A mini review on cathode materials for sodiumâ€ion batteries. International Journal of Applied Ceramic Technology, 2022, 19, 913-923. | 2.1 | 26 |
| 59 | Synthesis and Characterization of Nanocrystalline SrTiO3. Journal of the American Ceramic Society, 2006, 89, 060612075903003-???. | 3.8 | 25 |
| 60 | High-frequency dielectric behaviour of gadolinium substituted Niâ€“Zn ferrites. Materials Letters, 2001, 48, 210-214. | 2.6 | 24 |
| 61 | Effect of Cu-substitution on the conductivity of Ag-rich Aglâ€“CuI solid solutions. Journal of Physics and Chemistry of Solids, 2003, 64, 961-966. | 4.0 | 24 |
| 62 | The effect of polymorphism on the lithium storage performance of Li2MnSiO4. Journal of Power Sources, 2016, 306, 552-558. | 7.8 | 24 |
| 63 | Mesoscopic Hole Conduction in Nanocrystalline SrTiO[sub 3]. Journal of the Electrochemical Society, 2007, 154, P69. | 2.9 | 22 |
| 64 | Introducing Na-sufficient P3-Na<sub>0.9</sub>Fe<sub>0.5</sub>Mn<sub>0.5</sub>O<sub>2</sub> as a cathode material for Na-ion batteries. Chemical Communications, 2020, 56, 10686-10689. | 4.1 | 22 |
| 65 | Solid state dye-sensitized solar cell with TiO2/NiO heterojunction: Effect of particle size and layer thickness on photovoltaic performance. Materials Chemistry and Physics, 2011, 125, 553-557. | 4.0 | 21 |
| 66 | Electronic Coupling of Cobalt Nanoparticles to Nitrogenâ€Doped Graphene for Oxygen Reduction and Evolution Reactions. ChemSusChem, 2016, 9, 3067-3073. | 6.8 | 21 |
| 67 | Impact of Synthesis Conditions in Na-Rich Prussian Blue Analogues. ACS Applied Materials & Interfaces, 2021, 13, 42682-42692. | 8.0 | 21 |
| 68 | Interconnected nanofibrous titanium dioxide bronze: an emerging lithium ion anode material for high rate performance. RSC Advances, 2013, 3, 2935. | 3.6 | 20 |
| 69 | Developing a light weight lithium ion battery â€“ an effective material and electrode design for high performance conversion anodes. RSC Advances, 2013, 3, 6386. | 3.6 | 20 |
| 70 | Synthesis, optical, electrochemical and photovoltaic properties of organic dyes containing trifluorenylamine donors. Dyes and Pigments, 2015, 113, 78-86. | 3.7 | 20 |
| 71 | Palladium nanoparticles anchored on graphene nanosheets: Methanol, ethanol oxidation reactions and their kinetic studies. Materials Research Bulletin, 2014, 60, 150-157. | 5.2 | 19 |
| 72 | Metal carbonates: alternative to metal oxides for supercapacitor applications? A case study of MnCO3 vs MnO2. Journal of Solid State Electrochemistry, 2016, 20, 1877-1883. | 2.5 | 19 |

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| 73 | Non-Debye conductivity relaxation in a mixed glassformer system. Journal of Non-Crystalline Solids, 2005, 351, 1573-1576. | 3.1 | 18 |
| 74 | Analysis of Heat Generation and Impedance Characteristics of Prussian Blue Analogue Cathode-based 18650-type Sodium-ion Cells. Journal of the Electrochemical Society, 2020, 167, 110504. | 2.9 | 18 |
| 75 | Tuning the Capacitance Properties of Nanocrystalline MnCO<sub>3</sub>by the Effect of a Carbonizing Agent. Journal of the Electrochemical Society, 2018, 165, A1865-A1873. | 2.9 | 16 |
| 76 | Thermodynamics of nano- and macrocrystalline anatase using cell voltage measurements. Physical Chemistry Chemical Physics, 2010, 12, 215-219. | 2.8 | 15 |
| 77 | Enhanced electrochemical performance of W incorporated VO2 nanocomposite cathode material for lithium battery application. Electrochimica Acta, 2018, 282, 480-489. | 5.2 | 15 |
| 78 | Investigations of Thermal Stability and Solid Electrolyte Interphase on Na<sub>2</sub>Ti<sub>3</sub>O<sub>7</sub>/C as a Non-carbonaceous Anode Material for Sodium Storage Using Non-flammable Ether-based Electrolyte. ACS Applied Materials & Interfaces, 2021, 13, 11732-11740. | 8.0 | 15 |
| 79 | Key design considerations for synthesis of mesoporous Î±-Li3V2(PO4)3/C for high power lithium batteries. Electrochimica Acta, 2021, 372, 137831. | 5.2 | 14 |
| 80 | Experimental and Theoretical Studies of Trisodiumâ€1,3,5â€Benzene Tricarboxylate as a Lowâ€Voltage Anode Material for Sodiumâ€Ion Batteries. Energy Technology, 2019, 7, 1801030. | 3.8 | 13 |
| 81 | Ionic conductivity in solid solutions of PbF2 and YF3. Materials Research Bulletin, 2001, 36, 1743-1749. | 5.2 | 12 |
| 82 | Low Temperature Aqueous Electrodeposited TiO<sub>x</sub> Thin Films as Electron Extraction Layer for Efficient Inverted Organic Solar Cells. ACS Applied Materials & Interfaces, 2014, 6, 2679-2685. | 8.0 | 11 |
| 83 | A fire-retarding electrolyte using triethyl phosphate as a solvent for sodium-ion batteries. Chemical Communications, 2022, 58, 533-536. | 4.1 | 10 |
| 84 | Antisite defects and valence state of vanadium in Na3V2(PO4)3. Physics of the Solid State, 2016, 58, 475-480. | 0.6 | 9 |
| 85 | Calorimetric and electrical studies on quenched Li2So4.H2O. Solid State Communications, 1989, 70, 581-586. | 1.9 | 8 |
| 86 | Quenched lithium sulphate. Journal of Physics and Chemistry of Solids, 1994, 55, 39-48. | 4.0 | 8 |
| 87 | Communicationâ€"Mg(TFSI)2-Based Hybrid Magnesium-Sodium Electrolyte: Case Study with NaTi2(PO4)3//Mg Cell. Journal of the Electrochemical Society, 2018, 165, A1092-A1094. | 2.9 | 6 |
| 88 | Infrared spectroscopy of Li2MnSiO4: A cathode material for Li ion batteries. AIP Conference Proceedings, 2015, , . | 0.4 | 3 |
| 89 | Enhanced Potential of Amorphous Electrode Materials: Case Study of RuO<sub>2</sub>. Zeitschrift Fur Anorganische Und Allgemeine Chemie, 2008, 634, 2011-2011. | 1.2 | 2 |
| 90 | A study on heat generation characteristics of Na3V2(PO4)3 cathode and hard carbon anode-based sodium-ion cells. Journal of Thermal Analysis and Calorimetry, 2022, 147, 8631-8649. | 3.6 | 2 |

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| 91 | Thermal conductivity measurements at low temperatures. Bulletin of Materials Science, 1995, 18, 1007-1011. | 1.7 | 1 |
| 92 | Special proceedings of the Symposium A: â€œAdvances in energy storage systems: lithium batteries, supercapacitors and beyondâ€, during ICMAT 2015, June 28â€“July 3, Singapore. Journal of Solid State Electrochemistry, 2016, 20, 1819-1820. | 2.5 | 1 |
| 93 | Investigations of Thermal Stability and SEI on Different Anodes for Sodium-Ion Battery Using Non-Flammable Ether-Based Electrolyte. ECS Meeting Abstracts, 2018, , . | 0.0 | 1 |
| 94 | Special issue to â€œICMAT 2009, Symposium F: nanostructured materials for electrochemical energy systems: lithium batteries, supercapacitors and fuel cells, June 28-July 3, 2009, Singaporeâ€• Journal of Solid State Electrochemistry, 2010, 14, 1741-1742. | 2.5 | 0 |
| 95 | Nanostructured electrode materials for Li-ion battery. Proceedings of SPIE, 2010, , . | 0.8 | 0 |
| 96 | (Invited) Oxide- and Polyanion- based Cathode Materials for Li-ion and Na-ion Batteries. ECS Meeting Abstracts, 2021, MA2021-02, 201-201. | 0.0 | 0 |
| 97 | A Study on the Capacity Degradation in Na3.2V1.8Zn0.2(PO4)3 Cathode and Hard Carbon Anode Based Sodium-Ion Cells. Journal of the Electrochemical Society, 0, , . | 2.9 | 0 |