Bharathiar University

State University I "A++" Grade by NAAC I 26th Rank in MoE-NIRF
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Dr R KALAI SELVAN

Associate Professor
Department of Physics

Bharathiar University

Tamil Nadu

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Research Area

- Energy Storage Devices
- Electrocatalytic Materials
- Magnetic Materials

Courses Teaching

- Condensed Matter Physics
- Advanced Physics
- Electrochemical Energy Devices

Research Experience: 17

Teaching Experience: 15

Research Credentials (as on January 2025 – Source: Google scholar)

H-index: 63 Citations: 11611 i10-index: 136

Publications

International Journals: 171 National Journals: 1

Career

At Bharathiar University

1. Designation : Associate Professor
Period : February 2019 - Till Date

2. Designation : Assistant Professor
Period : February 2009 - February 2019

Other Institutes

1. Designation : Post Doctoral Fellow
Institution Name : Bar-Ilan University, ISRAEL
Period : January 2007 - December 2008

Education

Ph. D.
Subject : Physics
Institution : Alagappa University
Affiliated University : Alagappa University
Year of Award : December 2006

M. Phil.
Subject : Physical Science
Institution : Madurai Kamaraj University
Affiliated University : Madurai Kamaraj University
Year of Award : April 2001

M. Sc.
Subject : Physics
Institution : NMSSVN College
Affiliated University : Madurai Kamaraj University
Year of Award : April 1999

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B. Sc.
Subject : Physics
Institution : Vivekananda College
Affiliated University : Manonmaniam Sundaranar University
Year of Award : April 1997

Projects
National Level
Ongoing - completed - 7

Research Guidance
Completed
M.Phil. - 16 Ph.D. - 12
On Going
Ph.D. - 4

Visits
1. -)

Publications

International Journals - 171

171. The single-step synthesis of Pt/WC decorated carbon nanotubes and its electrocatalytic properties

Materials Letters, 385 (2025) 138119 (April 2025)
M. Ganeshbabu, R. Kalai Selvan, Aharon Gedanken

170. Unraveling the electrochemical K-ion intercalation kinetics of sol–gel synthesized Co-substituted K0.7MnO2 electrodes for K-ion batteries

Journal of Electroanalytical Chemistry, 979 (2025) 118914 (February 2025)
N. Prasanna Naga Puneeth, S.D. Kaushik b , R. Kalai Selvan

169. Interplay Between Ni and Fe-ions Substituted Mn-Rich Prussian Blue Analogues as a Promising Cathode for High-Energy K-ion Batteries

Energy Fuels 39 (2025) 880–894 (February 2025)
N. Prasanna Naga Puneeth, Leonid Vasylechko, S.D. Kaushik, R. Kalai Selvan

168. Li-ion diffusional insights, temperature-dependent electrical and dielectric properties of LiNi1/3Mn1/3Co1/3PO4 nanoparticles

Journal of Physics and Chemistry of Solids, 197 (2025) 112420 (January 2025)
M. Ganeshbabu, Leonid Vasylechko, R. Kalai Selvan

167. The trifunctional electrocatalytic activity of hierarchically structured porous carbon derived from environmentally malignant Prosopis juliflora

Carbon Trends, 17 (2024) 100419 (November 2024)
S. Shanmugapriya, M. Ganeshbabu, S. Surendran, Yun Sung Lee, R. Kalai Selvan

166. Preparation and Conductivity analysis of Li0.33La0.557TiO3 nanofiber incorporated PEO-PVDF-HFP-LiClO4 solid polymer electrolyte for high voltage lithium metal batteries

Polymers for Advanced Technologies, 35 (2024) e6603 (October 2024)
M. Ganeshbabu, R. Kalai Selvan

165. Unlocking the electrocatalytic behaviour of Cu2MnS2 nanoflakes anchored rGO for oxygen evolution reaction (OER) in an alkaline medium

Langmuir, 40 (2024) 22230–22244 (October 2024)
S. Harshini, M. Jayachandran, M. Ganeshbabu, R. Kalai Selvan, M. Alagiri

164. K-ion intercalation behavior of carbon-coated K3V2(PO4)3 nanostructures prepared by sol-gel method.

Ceramics International, 50 (2024) 14490-14496 (May 2024)
M. Ragupathi, R. Kalai Selvan

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163. Effect of Na-ion doping on the improved electrochemical performances of olivine structured LiNi1/3Mn1/3Co1/3PO4 for Li-ion hybrid capacitors.

Ionics, 30 (2024) 1669-1676 (March 2024)
M. Ganeshbabu, N.Prasanna Naga Puneeth, R. Kalai Selvan

162. Improved K-ion diffusion kinetics of cobalt-substituted P3-type KxMnO2 electrodes for K-ion Batteries.

ACS Applied Energy Materials, 7 (2024) 2600-2613 (March 2024)
N. Prasanna Naga Puneeth, S.D.Kaushik, R.Kalai Selvan

161. Nano-graphitic crystallites effect on the improved K-ion intercalation properties of Kigelia Africana fruit-derived hard carbon for potassium-ion batteries.

Chemical Engineering Journal, 480 (2024) 147835 (January 2024)
Prasanna Naga Puneeth, K. Rajkumar, A. Soundarya, S.D.Kaushik, Yun-Sung Lee, Sangho Park, R.Kalai Selvan

160. Photocatalytic degradation of fluoroquinolone antibiotics using biopolymer functionalized copper oxide nanoparticles by facile sonochemical method

International Journal of Biological Macromolecules, 253 (2023) 127027 (December 2023)
M.Ganeshbabu, J.Shiva Priya, G. Murali Manoj, N.Prasanna Naga Puneeth, C.Shobana, H.Shankar, R.Kalai Selvan

159. Oxygen-rich functionalized porous Carbon by KMnO4 activation on pods of Prosopis juliflora for symmetric supercapacitors

Journal of Energy Storage, 72 (2023) 108216 (November 2023)
K.Vignesh, M.Ganeshbabu, N.Prasanna Naga Puneeth, T.Mathivanan, B.Ramkumar, Yun Sung Lee, R.Kalai Selvan

158. Improved electrocatalytic properties of bundled B/N co-doped electrospun carbon nanofibers with Pt nanostructures through dopant-induced metal-support interaction (DIMSI).

Materials Science and Engineering B, 284 (2022) 115880 (October 2022)
S.Shanmugapriya, Pei Zhu, M.Ganeshbabu, Yun Sung Lee, Xiangwu Zhang, R. Kalai Selvan

157. Mössbauer spectroscopy with a high-velocity resolution in the studies of nanomaterials

Nanomaterials, 12 (2022) 3748 (October 2022)
I. V. Alenkina, M. V. Ushakov, P. C. Morais, R.Kalai Selvan, E. Kuzmann, Z. Klencsár, I. Felner, Z. Homonnay, M. I. Oshtrakh

156. X-ray diffraction, magnetic measurements, and Mössbauer spectroscopy of MgFe2O4 nanoparticles

Journal of Alloys and Compounds, 912 (2022) 165125 (August 2022)
M.V. Ushakov, V.D.Nithya, N.Rajeesh Kumar, S. Arunkumar, A.V.Chukin, R.Kalai Selvan, M.I. Oshtrakh

155. Experimental and Theoretical Analysis of Synthesized Poly-(pthalazinone ether sulfone ketone) Copolymer Modified Separators for Li-S Batteries

ChemElectroChem, 9 (2022) e202200561 (August 2022)
T. Mathivanan, Subrata Dolui, P. Nandhini, K.Rajkumar, L. Senthilkumar, Sanjib Banerjee, R. Kalai Selvan

154. Synthesis and electrochemical properties of crystalline K0.7MnO2 particles for K- ion batteries

Materials Letters, 316 (2022) 131997 (June 2022)
N.Prasanna Naga Puneeth, S.D.Kaushik, R.Kalai Selvan

153. Enhancement of electrochemical performances of Li-S batteries using PPESK and Nelumbo nucifera-derived porous carbon-modified separator

Materials Letters, 315 (2022) 131935 (May 2022)
T. Mathivanan, P. Nandhini, Subrata Dolui, L. Senthilkumar, Sanjib Banerjee, R. Kalai Selvan

152. Green Synthesis of multifunctional Carbon quantum dots: An approach in cancer theranostics

Biomaterials Advances, 136 (2022) 212756 (May 2022)
J. P. Malavika, C. Shobana, S. Sundarraj, M. Ganeshbabu, P. Kumar, R. Kalai Selvan

151. Microwave-assisted reflux synthesis of spherical Co2Fe(CN)6 nanoparticles for high-performance asymmetric supercapacitors

Materials Letters, 304 (2021) 130593 (December 2021)
A.Shanmugavani, Ai Dong Li, R.Kalai selvan

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150. Preparation of sponge-like porous Carbon from Ficus Religiosa leaf and its K-ion intercalation properties

Materials Letters, 301 (2021) 130298 (October 2021)
K.Rajkumar, M.Ragupathi, Yun Sung Lee, R.Kalai Selvan

149. A sustainable green synthesis of functionalized biocompatible carbon quantum dots from Aloe barbadensis (Miller) and its multifunctional applications

Environmental Research, 200 (2021) 111414 (September 2021)
J.P.Malavika, C.Shobana, M.Ragupathi, P.Kumar, Yun Sung Lee, M.Govarthanan, R.Kalai Selvan

148. Microwave-assisted green Synthesis of ?uorescent carbon quantum dots from Mexican Mint extract for Fe3+ detection and bio-imaging applications

Environmental Research, 199 (2021) 111263 (August 2021)
N. Architha, M. Ragupathi, C. Shobana, T. Selvankumar, P. Kumar, Yun Sung Lee, R.Kalai Selvan

147. Understanding the relationship between the local crystal structure and the ferrimagnetic ordering of CoxMn3-xO4 (x = 0 - 0.5) solid solutions

Journal of Alloys and Compounds, 853 (2021) 157256 (February 2021)
N.Rajeesh Kumar, Leonid Vasylechko, S.Shailja, C.S.Yadav, R.Kalai Selvan

146. Synthesis of metal-free nitrogen-enriched porous Carbon and its electrochemical sensing behavior for the highly sensitive detection of dopamine: Both experimental and theoretical investigation

Materials Chemistry and Physics, 260 (2021) 124094 (February 2021)
P. Rupa Kasturi, T. K. Aparna, A. Agnes Lincy, L. Senthilkumar, R. Sivasubramanian, Yun-Sung Lee, R. Kalai Selvan

145. Exchange interactions and the nature of magnetic ordering in Zn0.6Mn2.4O4 particles

Physica B: Condensed Matter, 599 (2020) 412460 (December 2020)
N.Rajeesh Kumar, R.Kalai Selvan, Leonid Vasylechko, S.Saravanan, M. S. Seehra

144. Reentrant spin-glass behaviour in highly frustrated Mn-rich spinel zinc manganate

Journal of Physics: Condensed Matter, 32 (2020) 245802 (November 2020)
N. Rajeesh Kumar, S.Karthik, Leonid Vasylechko, R. Kalai Selvan,

143. Hydrothermally derived porous carbon and its improved electrochemical performance for supercapacitors using redox additive electrolytes

Journal of Physics and Chemistry of Solids, 143 (2020) 109447 (November 2020)
P. Rupa Kasturi, R. Harivignesh, Yun Sung Lee, R. Kalai Selvan

142. Sonochemical Synthesis, Structural, Electrical Transport and Magnetic Properties of NiWO4 Nanoparticles

Journal of Materials Science: Materials in Electronics, 31 (2020) 15616–15626 (July 2020)
S. Shanmugapriya, V. D. Nithya, A.Rajalakshmi, K. S. Sivaranjani, S. Shalini, P. Bharathi, P. Rupa Kasturi, R. Kalai Selvan

141. Hexanedioic Acid Mediated in-situ Functionalized Interconnected Graphitic 3D Carbon Nanofibers as Pt Support for Trifunctional Electrocatalysts

Sustainable Energy and Fuels, 4 (2020) 2808 – 2822 (April 2020)
S. Shanmugapriya, P. Rupa Kasturi, Pei Zhu, Jiadeng Zhu, Chaoyi Yan, Xiangwu Zhang, R. Kalai Selvan

140. Polyol assisted formaldehyde reduction of bi-metallic Pt-Pd supported agro-waste derived carbon spheres as an efficient electrocatalyst for formic acid and ethylene glycol oxidation

Journal of Colloid and Interface Science, 561 (2020) 358-371 (March 2020)
P. Rupa Kasturi, R.Hari Vignesh, Y. S. Lee, R.Kalai Selvan

139. Potassium-ion intercalation in anti-NASICON-type iron molybdate Fe2(MoO4)3

Electrochemistry Communications, 110 (2020) 106617 (January 2020)
B.Senthilkumar, R. Kalai Selvan, Prabeer Barpanda

138. Electrocatalytic Hydrogen Evolution Reaction Studies of NiW1-xMoxO4 (x = 0.0, 0.5 and 1.0) nanoparticles in both acid and alkaline electrolytes

Journal of Materials Science: Materials for Electronics, 31 (2020) 2378-2387 (January 2020)
P.Rupa Kasturi, S.Shanmugapriya, M. Elizabeth, K. Athira, R.Kalai Selvan

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137. Hydrothermal deposition of CoS nanostructures and its multifunctional applications in Supercapattery and Water electrolyser

Applied Surface Science, 494 (2019) 916-928 (November 2019)
S. Surendran, S.Shanmugapriya, R.Hari Vignesh, G.Janani, D.Kalpana, Yun Sung Lee, Uk Sim, R. Kalai Selvan

136. Preparation of starch-based porous carbon electrode and biopolymer electrolyte for all-solid-state electric double layer capacitor

Journal of Colloid and Interface Science, 554 (2019) 142-156 (October 2019)
P. Rupa Kasturi, R. Hari Vignesh, Danielle Meyrick, Yun Sung Lee, R. Kalai Selvan

135. Improved surface charge storage properties of Prosopis juliflora (pods) derived onion-like porous carbon through redox-mediated reactions for electric double-layer capacitors

Applied Surface Science, 492 (2019) 896-908 (October 2019)
S.Shanmugapriya, S.Surendran, Yun Sung Lee, R.Kalai Selvan

134. Multifunctional high-performance electrocatalytic applications of Nb2O5 incorporated carbon nanofibers as Pt support catalyst

Advanced Materials Interfaces, 6 (2019) 1900565 (15 Pages) (September 2019)
S.Shanmugapriya, Pei Zhu, Choayi Yan, A. M. Asiri, Xiangwu Zhang, R.Kalai Selvan

133. Ni2P2O7 microsheets as an Efficient Bi-functional Electrocatalysts for Water Splitting Application

Sustainable Energy & Fuels, 3 (2019) 2435-2446 (April 2019)
S. Surendran, A. Sivanantham, S. Shanmugam, Uk Sim, R. Kalai Selvan

132. Hydrothermally synthesised NiCoP nanostructures and electrospun N-doped carbon nanofiber as multifunctional potential electrode for hybrid water electrolyser and supercapatteries

Electrochimica Acta, 296 (2019) 1083-1094 (February 2019)
S. Surendran, S. Shanmugapriya, Pei Zhu, Chaoyi Yan, R. Hari Vignesh, Y. S. Lee, Xiangwu Zhang, R. Kalai Selvan

131. Bio-derived carbon as an efficient supporting electro-catalyst for oxygen reduction reaction

Journal of Physics and Chemistry of Solids, 124 (2019) 305-311 (January 2019)
P.Rupa Kasturi, A.Arunchandar, D.Kalpana, R.Kalai Selvan

130. Synthesis and electrochemical performances of ?-KCoPO4 nanocrystals as a promising electrode for aqueous supercapatteries

ChemElectroChem, 6 (2019) 369-377 (January 2019)
N. Priyadharsini, S.Surendran, B.Senthilkumar, V. Leonid, R. Kalai Selvan

129. Structural and magnetic properties of CoMn2O4 synthesized by auto combustion method

Journal of Materials Science: Materials for Electronics, 30 (2019) 975-981 (January 2019)
N. Rajeesh Kumar, P. Rupa Kasturi, J. Jaya, P. Saravanan, Yun Sung Lee, Danielle Meyrick, R. Kalai Selvan

128. High-Performance 3-D Fiber Network Composite Electrolyte Enabled with Li-Ion Conducting Nanofibers and Amorphous PEO-Based Cross-Linked Polymer for Ambient All-Solid-State Lithium-Metal Batteries

Advanced Fiber Materials, 1 (2019) 46-60 (January 2019)
Chaoyi Yan, Pei Zhu, Hao Jia, Jiadeng Zhu, R. Kalai Selvan, Ya Li, Xia Dong, Zhuang Du, Indunil Angunawela, Nianqiang Wu, Mahmut Dirican, Xiangwu Zhang

127. Carbon enriched cobalt phosphide with assorted nanostructure as a multifunctional electrode for energy conversion and storage devices

ChemistrySelect, 3 (2018)12303-12313 (November 2018)
S. Surendran, S. Shanmugapriya, Yun Sung Lee, Yk Kim, R. Kalai Selvan

126. Morphology-dependent electrochemical properties of LiCoPO4 for aqueous hybrid capacitors

Electrochimica Acta, 289 (2018) 516-526 (November 2018)
N. Priyadharsini, S.Shanmugapriya, P.Rupa Kasturi, S.Surendran, R. Kalai Selvan

125. Improved electrochemical performances of LiMnPO4 synthesized by a hydrothermal method for Li-ion hybrid supercapatteries

Journal of Materials Science: Materials for Electronics, 29 (2018)18553-18565 (November 2018)
N. Priyadharsini, A. Shanmugavani, S. Surendran, B. Senthilkumar, Leonid Vasylechko, R. Kalai Selvan

Dr R KALAI SELVAN , Associate Professor , Department of Physics

124. The First-principles study of CoSb2O4 and its electrochemical properties for supercapacitors

Electrochimica Acta, 283 (2018) 949-958 (September 2018)
A.Shanmugavani, M.Lalitha, N.R.Kumar,L.Vasylechko, Y.S.Lee,L.Senthilkumar, R.Kalai Selvan

123. Electrospun Carbon Nanofibers Encapsulated with NiCoP: A Multifunctional Electrode for Supercapattery and Oxygen Reduction, Oxygen Evolution, and Hydrogen Evolution Reactions

Advanced Energy Materials, 8 (2018) 1800555 (April 2018)
S. Surendran, S. Shanmugapriya, A.Sivanantham, S.Shanmugam, R. Kalai Selvan

122. Effect of chelating agent on the sol-gel thermolysis synthesis of LiNiPO4 and its electrochemical properties for hybrid capacitors

Journal of Physics and Chemistry of Solids, 119 (2018) 183-192 (March 2018)
N. Priyadharsini, S.Rupa Kasturi, A.Shanmugavani, S.Surendran, R. Kalai Selvan

121. Effect of zinc precursors on the hydrogen evolution reaction (HER) and electrochemical corrosion studies of ZnWO4 nanoparticles synthesized by hot injection method

Journal of Physics and Chemistry of Solids, 119 (2018) 210-219 (March 2018)
A.Shanmugavani, S.Gowrimeena, P.Rupa Kasturi, S.Yuvaraj, L.John Berchmans, R.Kalai Selvan

120. Facile hydrothermal synthesis of carbon coated cobalt ferrite spherical nanoparticles as a potential negative electrode for flexible supercapattery

Journal of Colloid and Interface Science, 513 (2018) 480-488 (March 2018)
K. Vijaya Sankar, S. Shanmugapriya, S.Surendran, Seong C Jun, R. Kalai Selvan

119. Biomass derived porous Carbon modified glass fiber separator as polysulfide reservoir for Li-S batteries

Journal of Colloid and Interface Science, 513 (2018) 231-239 (March 2018)
R.Kalai Selvan, Pei Zhu, Chaoi Yan, Jiandeng Zhu, M Dirican, A Shanmugavani, Y S Lee, Xiangwu Zhang,

118. Li0.33La0.557TiO3 ceramic nanofiber-enhanced polyethylene oxide based composite polymer electrolyte for all-solid-state lithium batteries

Journal of Materials Chemistry A, 6 (2018) 4279-4285 (February 2018)
Pei Zhu, Chaoyi Yan, Mahmut Dirican, Jiadeng Zhu, Jun Zang, R. Kalai Selvan, Ching-Chang Chung, Hao Jia, Ya Li, Yasar Kiyak, Nianqiang Wu, Xiangwu Zhang

117. Interweaved nickel phosphide sponge as a multifunctional electrode for flexible supercapattery and water splitting applications

ACS Applied Energy Materials, 1 (2018) 78-92 (January 2018)
S. Surendran, S. Shanmugapriya, S. Shanmugam, V.Leonid, R. Kalai Selvan

116. Sol-gel synthesis, structural refinement and electrochemical properties of potassium manganese phosphate for hybrid supercapacitors

Ionics, 24 (2018) 2073-2082 (January 2018)
N.Priyadarshini, A.Shanmugavani, V. Leonid, R.Kalai Selvan

115. Bio-synthesized silver nanoparticles and its impact on the antioxidant response and histological alterations of Indian major carp Labeo rohita with combined response surface methodology (RSM) analysis

Journal of Cluster Science, 29 (2018) 267-279 (January 2018)
C Shobana, B Rangasamy, S Surendran, R.Kalai Selvan, M Ramesh

114. Facile Synthesis of monodispersed 3D hierarchical Fe3O4 nanostructures decorated r-GO as the negative electrodes for Li-ion batteries

Materials Research Bulletin, 97 (2018) 272-280 (January 2018)
S. Rajesh Kumar, Jong Guk Kim, C. Viswanathan, Won Bae Kim, R. Kalai Selvan, N. Ponpandian

113. Synthesis and characterization of carbon coated LiCo1/3Ni1/3Mn1/3O2 and bio-mass derived graphene like porous carbon electrodes for Li-ion hybrid supercapacitor

Journal of Physics and Chemistry of Solids, 112 (2018) 270-279 (January 2018)
B. Ramkumar, S.Yuvaraj, S.Surendran, K.Pandi, R.Hari Vignesh, Y.S.Lee, R. Kalai Selvan

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112. Effect of rGO reduction degree on the performance of polysulfide rejection in lithium-sulfur batteries

Carbon, 126 (2018) 594-600 (January 2018)
Pei Zhu, Jun Zang, Jiadeng Zhu, Yao Lu, Chen Chen, Mengjin Jiang, Chaoyi Yan, Mahmut Dirican, R. Kalai Selvan, David Kim, Xiangwu Zhang

111. Growth and Characterization of Three Dimensional Flower-Like ?-NiS on Carbon Cloth: A Dexterous and Flexible Electrode for Supercapattery and Water Splitting Applications

Advanced Materials Interfaces, 5 (2018)1701056 (January 2018)
S.Surendran, R.Kalai Selvan

110. Mössbauer spectroscopy of NiFe2O4 nanoparticles: The effect of Ni2+ in the Fe3+ local microenvironment in both tetrahedral and octahedral sites

Materials Chemistry and Physics, 202 (2017) 159-168 (December 2017)
Mikhail Ushakov, B. Senthilkumar, R. Kalai Selvan, I. Felner, Michael Oshtrakh

109. Growth and characterization of three dimensional flower-like ?-NiS on carbon cloth: A dexterous and flexible electrode for supercapattery and water splitting applications

Advanced Materials Interfaces, 5 (2018) 1701056 (December 2017)
S.Surendran, R.Kalai Selvan

108. Nano-sheet like KNiPO4 as a positive electrode material for aqueous hybrid supercapacitors

Electrochimica Acta, 246 (2017) 963–970 (August 2017)
N.Priyadarshini, R.Kalai Selvan

107. Facile hydrothermal synthesis and First principle computational studies of NiSb2O4 and its electrochemical properties with Ni3(Fe(CN)6)2(H2O) for hybrid supercapacitors

ChemistrySelect, 2 (2017) 6823-6832 (August 2017)
A. Shanmugavani, M.Lalitha, S. Yuvaraj, V. Leonid, D. Meyrick, L. Senthilkumar, R.Kalai Selvan

106. Facile hydrothermal synthesis and characterization of Co2GeO4/r-GO@C ternary nanocomposite as negative electrode for Li-ion batteries

Journal of Colloid and Interface Science, 498 (2017) 76-84 (July 2017)
S. Yuvaraj, K. Karthikeyan, R. Kalai Selvan

105. A novel bi-functional double-layer rGO-PVDF/PVDF composite nanofiber membrane separator with enhanced thermal stability and effective polysulfide inhibition for high-performance lithium-sulphur batteries

Journal of Materials Chemistry A, 5 (2017) 15096-15104 (June 2017)
Pei Zhu, Jiadeng Zhu, Jun Zang, Chen Chen, Yao Lu, Mengjin Jiang, Chaoyi Yan, Mahmut Dirican, R. Kalai Selvan, Xiangwu Zhang

104. Fabrication of solid-state flexible fiber supercapacitor using Agave Americana derived activated carbon and its performance analysis at different conditions

Chemistry Select, 1 (2016) 6713-6725 (December 2016)
K.Pandi, K.Vijaya Sankar, D.Kalpana, Y.S.Lee, R.Kalai Selvan

103. Fabrication of reduced Graphene oxide based ultra-high cycle life flexible fiber supercapacitor with different modes

Chemistry Select, 1 (2016) 6476-6484 (December 2016)
K.Vijayasankar, R.Kalai Selvan, Y.S.Lee

102. Fabrication of solid-state flexible fiber supercapacitor using Agave Americana derived activated carbon and its performance analysis at different conditions

Chemistry Select, 1 (2016) 6713-6725 (December 2016)
K.Pandi, K.Vijaya Sankar, D.Kalpana, Y.S.Lee, R.Kalai Selvan

101. Temperature-dependent electrical and magnetic properties of CoWO4 nanoparticles synthesized by sonochemical method

Materials Science and Engineering B, 214(2016) 57-67. (December 2016)
S Shanmugapriya, S Surendran, VD Nithya, P Saravanan, R Kalai Selvan

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100. Fabrication of flexible fiber supercapacitor using covalently grafted CoFe2O4/reduced graphene oxide/polyaniline and its electrochemical performances

Electrochimica Acta, 213 (2016) 469-481 (September 2016)
K.Vijaya Sankar, R. Kalai Selvan

99. Nitrogen-doped multi-walled carbon nanotubes-MnCo2O4 microsphere as electro-catalyst for efficient oxygen reduction reaction

International Journal of Hydrogen Energy, 41 (2016) 15199-15207 (September 2016)
S Yuvaraj, A Vignesh, S Shanmugam, R.Kalai Selvan

98. Nitrogen-Doped Reduced Graphene Oxide and aniline based redox additive electrolyte for a Flexible Fiber Supercapacitor

RSC Advances, 6 (2016) 67898-67909 (July 2016)
K.Vijayasankar, R.Kalai Selvan, R.Harivignesh, Y.S.Lee

97. Facile hydrothermal synthesis and characterization of Co2GeO4/r-GO@C ternary nanocomposite as negative electrode for Li-ion batteries

Journal of Colloid and Interface Science, 498 (2017) 76-84 (July 2016)
S. Yuvaraj, K. Karthikeyan, R. Kalai Selvan

96. Pt decorated Artocarpus Heterophyllus Seed derived carbon as an anode catalyst for DMFC application

RSC Advances, 6 (2016) 62680–62694 (June 2016)
S.Rupa Kasturi, R.Kalai Selvan, Y.S.Lee

95. Surfactant free hydrothermal Synthesis of hierarchically structured spherical CuBi2O4 as negative electrodes for Li-ion hybrid capacitors

Journal of Colloid and interface Science, 469 (2016) 47-56 (May 2016)
S.Yuvaraj, K.Karthikeyan, Y.S.Lee, R.Kalai Selvan

94. Synthesis and electrochemical performances of Co2TiO4 and its core-shell structure of Co2TiO4@C as negative electrode for Li-ion batteries

RSC Advances, 6 (2016) 69016 – 69026 (May 2016)
S.Yuvaraj, R.Hari Vignesh, V. Leonid, Y.S.Lee, R.Kalai Selvan

93. Studies on the synthesis and physico-chemical properties of porous LiFe0.9M0.1P2O7 (M=Fe, Co, Mn, Ni) nanoparticles

Journal of Nanoscience and Nanotechnology, 16 (2016) 342-356 (January 2016)
Y. Sudha, K.Vijaya Sankar, Samar Layek, C. Sanjeeviraja, R. Kalai Selvan

92. Improved electrochemical performances of CuCo2O4/CuO nanocomposites for asymmetric supercapacitors

Electrochimica acta, 188 (2016) 852–862 (January 2016)
A.Shanmugavani, R.Kalai Selvan

91. Microwave-assisted reflux synthesis of NiCo2O4/NiO composite: Fabrication of high-performance asymmetric supercapacitor with Fe2O3

Electrochimica Acta, 189 (2016) 283-294 (January 2016)
A.Shanmugavani, R.Kalai Selvan

90. An overview of AB2O4- and A2BO4-structured negative electrodes for advanced Li-ion batteries

RSC Advances, 6 (2016) 21448-21474 (January 2016)
S. Yuvaraj, R. Kalai Selvan, Y. S. Lee

89. Synthesis and Characterization of MnFe2O4 Nanoparticles for Impedometric Ammonia Gas Sensor

Sensors and Actuators B: Chemical, 220 (2015) 50-58 (December 2015)
R.Hari Vignesh, K.Vijayasankar, S.Amaresh, Y.S.Lee, R.Kalai Selvan

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88. Electrical and magnetic properties of spherical SmFeO3 by aspartic acid assisted combustion method

Materials Research Bulletin, 72 (2015) 77-82 (December 2015)
S.Yuvaraj, L. Samar, S.M.Vidyavathy, S.Yuvaraj, D.Meyrick, R. Kalai elvan

87. Temperature dependent electrical and magnetic properties of CoWO4 nanoparticles synthesized by sonochemical method

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S.Shanmugapriya, S.Surendran, V.D.Nithya, P.Saravanan, R.Kalai Selvan

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Dr R KALAI SELVAN , Associate Professor , Department of Physics

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Dr R KALAI SELVAN , Associate Professor , Department of Physics

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1. Combustion synthesis of ABO3 and AB2O4 compounds – An overview

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Projects

Completed - 7

1. Development of cost-effective electrode materials from Eichhornia Crassipes for electrochemical supercapacitors DAE-BRNS 18.86 Lakhs (September 2010 - September 2013)

2. Development of carbon-coated mesoporous ferrite nanostructures embedded conducting polymers as electrodes in electrochemical supercapacitors DST 22.25 Lakhs (May 2012 - May 2015)

3. Shape and size-controlled synthesis of Co2AO4@C (A = Sn, Ti, V and Si) nanocomposites as anodes for Li-ion batteries UGC-MRP 5.89 Lakhs (July 2012 - July 2015)

4. Development of high energy K-ion hybrid capacitors using binder free electrospun K3M2(PO4)3@CNF (M=V, Mn, Ti,) and porous carbon derived from dead leaves of Ficus religiosa CSIR 18 Lakhs (June 2018 - June 2021)

Dr R KALAI SELVAN , Associate Professor , Department of Physics

5. Investigation on the reduction of polysulfide shuttling effect using electrospun polymer composite membrane separators for high-performance Li-S batteries DST – SERB 37.42 Lakhs (April 2019 - April 2022)

6. Investigations on the crystal structure of K0.7Mn1-yMyO2 particles by neutron powder diffraction for K-ion batteries Others 12 Lakhs (July 2020 - July 2023)

7. Development and Performance Analysis of All Solid State Flexible High Energy Li-ion Hybrid Capacitors
TANSCHE 32.71 Lakhs (April 2021 - October 2024)