

Faculty Profile of Dr. R. Kalai Selvan



Dr. R. Kalai Selvan
Associate Professor
Department of Physics

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Research Area

- Energy Storage Devices
- Electrocatalytic Materials
- Magnetic Materials

Education & Career

Education

Ph. D.

Subject : Physics

Institution : Alagappa University

Affiliated University : Alagappa University

Year of Award : 2006

M.Phil.,

Subject : Material Science

Institution : Madurai Kamaraj University

Affiliated University : Madurai Kamaraj University

Year of Award : 2001

M. Sc.,

Subject: Physics

Institution : N.M.S.S.V.N College, Madurai

Affiliated University : Madurai Kamaraj University

Year of Award : 2000

B. Sc.,

Subject: Physics

Institution: Vivekananda College, Agasteeswaram

Affiliated University: Manonmaniam Sundaranar University

Year of Award: 1997

Career

At Bharathiar University (Reverse Order)

Associate Professor : 24.02.2019 to Till Date

Assistant Professor: 31.01.2009 to 23.02.2019

Past Experience

Post Doctoral Fellow: 25.01.2007 to 30.12.2008 at Bar-Ilan University, Israel

Awards

1. **Indian National Science Academy (INSA) Visiting Fellowship**, to work at the Department of Chemistry, Indian Institute of Technology Madras, Chennai, 15th May to 15th July 2012.

2. Received **Travel Grant** for an oral presentation at International Conference on Advanced Capacitors (ICAC-2013) held in Japan during May 27 - 30, 2013 supported by DST - ITS and INSA, New Delhi
3. **ICTP - UNESCO** grants for a visit to the Abdus Salam International Centre for Theoretical Physics (ICTP), Trieste, **Italy**, from 11th May 2015 to 15th May 2015.
4. Awarded **Young Scientist Award-2015** (Saraswathy Srinivasan Prize) in Physical Sciences for the year 2015 from the Academy of Sciences, Chennai.
5. **Fellow of Academy of Sciences**, Chennai, India in 2015
6. Awarded **Raman Post-Doctoral Fellowship** by University Grants Commission (UGC) to work at **North Carolina State University, USA** for six months (August 2016 - February 2017).
7. GRABS Young Scientist Award by Educational Charitable Trust, Chennai, India in 2017
8. Received **Travel Grant** for poster presentation at 22nd International Conference on Solid State Ionics held at S. Korea during June 16 - 21, 2019 supported by DST - ITS
9. According to a citations report, listed in the **Top 2% Scientists (Energy)**, analyzed by John Ioannidis team, Stanford University (**2021** and **2022**).

Membership

Professional Boldies

Member

Member: Neutron Scattering Society of India (NSSI), BARC, Mumbai

Period: Lifetime

Visits

Country Visited : South Korea

Duration of Visit : 16-21, June 2019

Purpose of Visit : To attend the SSI-2019 Conference

Country Visited : USA

Duration of Visit : August 2016 - February 2017

Purpose of Visit : Raman Post Doctoral Fellow

Country Visited : Italy

Duration of Visit : 11-15, May 2015

Purpose of Visit : To attend ICTP Workshop

Country Visited : Japan

Duration of Visit : 27-30, May 2013

Purpose of Visit : To attend the SSI-2019 Conference

Country Visited : Israel

Duration of Visit : January 2007 to December 2008

Purpose of Visit : Post Doctoral Fellow

Collaborators

Prof. Yun Sung Lee,

Faculty of Applied Chemical Engineering,

Chonnam National University,

Gwangju 500-757, **South Korea**

Prof. Leonid Vasylechko

Semiconductor Electronics Department,

Lviv Polytechnic National University,

12 Bandera Street, Lviv 79013, **Ukraine**

Prof. (Em.) Aharon Gedanken

Department of Chemistry

Bar-Ilan University,

Ramat-Gan - 52900, **Israel**

Prof. Xiangwu Zhang,

College of Textiles,
North Carolina State University
1020 Main Campus Drive
Raleigh, NC 27695-8301, **USA**

Others

Projects

Funded Projects(National Level)

- [Ongoing - 03](#)
 - [Completed - 03](#)
-

1. DST

Title of the project: Development of carbon coated mesoporous ferrite nanostructures embedded conducting polymers as electrodes in electrochemical supercapacitors

Funding Agency: DST under Fast Track Young Scientist Scheme

Amount: Rs. 22.25 Lakhs

Duration: 2012-2016

2. UGC -MRP

Title of the project: Shape and size-controlled synthesis of Co₂AO₄@C (A = Sn, Ti, V and Si) nanocomposites as anodes for Li-ion batteries

Funding Agency: UGC -MRP

Amount: Rs. 5.89 Lakhs

Duration: 2012-2015

3. DAE - BRNS

Title of the project: Development of cost-effective electrode materials from Eichhornia Crassipes for electrochemical supercapacitors

Funding Agency: DAE - BRNS, Mumbai

Amount: Rs. 18.86 Lakhs

Duration: 2010-2013

1. TNSCHE-RGP

Title of the project: Development of flexible hybrid supercapacitors

Funding Agency: TNSCHE-RGP

Amount: Rs. 32.71 Lakhs

Duration: 2021-2024

2. DST-SERB, CRG

Title of the project: Development of Polymer based Separators for Li-S batteries

Funding Agency: DST-SERB, CRG

Amount: Rs. 37.42 Lakhs

Duration: 2019-2022

3. CSIR-EMR II

Title of the project : Development of high energy hybrid capacitors

Funding Agency : CSIR-EMR II

Amount : Rs. 18 Lakhs

Duration : 2018-2021

Consultancy Projects

- [Ongoing](#)
 - [Completed](#)
-

Research Guidance

- [Post Doc.](#)
- [Ph.D.](#)
- [M.Phil.](#)
- [M.Sc.](#)

Ongoing

Completed-01

Title: Development of Lithium Based Materials for Lithium Ion hybrid supercapacitors (**2017-18**)

Name: Dr.A.Shanmugavani

Ongoing-03

Mr. T. Mathivanan

Field of research: Modified separators for Lithium-Sulfur batteries

Date of Registration: 01.01.2021

Mr. M. Ganesh Babu

Field of research: Olivine structured materials for all solid state hybrid capacitors

Date of Registration: 01. 01.2021

Mr. N. Prasanna Naga Puneeth

Field of research: Layered transition metal oxides for potassium-ion batteries

Date of Registration: 01.10.2019

Completed-11

Dr. N.Rajeeshkumar

Title of the thesis: Investigations on the complex magnetic ordering of Zn^{2+} and Co^{2+} substituted spinel manganese oxides

Year of award: 2021

Dr. S.Shanmugapriya

Title of the thesis: Trifunctional electrocatalytic applications of Pt-supported functionalized electrospun carbon Nanofibers and *Prosopis Juliflora* derived porous carbon

Year of award: 2021

Dr. P.Rupa Kasturi

Title of the thesis: Multifunctional electrochemical applications of porous carbon derived from the starch of *Artocarpus heterophyllus* seeds

Year of award: 2020

Dr. S.Surendran

Title of the thesis: Studies on the synthesis of nanostructured transition metal sulphides and phosphides for flexible supercapatteries and water splitting applications

Year of award: 2019

Dr. N. Priyadarshini (Part-Time)

Title of the thesis: Synthesis and physico-chemical properties of nanostructured AMPO_4 and $\text{ANi}_{1/3}\text{Mn}_{1/3}\text{Co}_{1/3}\text{PO}_4$ (A=Li & K; M=Ni, Co & Mn) as positive electrodes for hybrid supercapacitors

Year of award: 2018

Dr. K. Vijaya Sankar

Title of the thesis: Investigation on the electrochemical performances of fabricated supercapacitor using heteroatom doped/un-doped r-GO and its composites (MFe_2O_4 /r-GO/Pani; M = Mn & Co) as electrodes

Year of award: 2017

Dr. S. Yuvaraj

Title of the thesis: Effect of carbon coating on the electrochemical properties of M_2SnO_4 (M=Zn & Co) and Co_2MO_4 (M=Ti, Si, Mn & Ge) for the potential negative electrodes in Li-ion batteries.

Year of award: 2016

Dr. A.Shanmugavani

Title of the thesis: Studies on the synthesis of spinel, MX_2O_4 (M= Zn, Co, Cu & Ni and X= Fe, Co & Sb) structured nanoparticles and its electrochemical performances for pseudocapacitors

Year of award: 2015

Dr. V. D. Nithya

Title of the thesis: Investigations on the synthesis and electrochemical properties of BiPO_4 , Bi_2WO_6 and FeVO_4 as novel negative electrodes for pseudocapacitors

Year of award: 2015

Dr. S. T. Senthilkumar

Title of the thesis: *Eichhornia crassipes* and *Tamarindus indica* fruit shell derived porous carbon electrode for supercapacitors and their improved electrochemical performance using redox additive electrolytes

Year of award: 2014

Dr. B. Senthilkumar

Title of the thesis: Investigations on the synthesis and electrochemical properties of sodium metal phosphates (NaMPO_4 ; $\text{M}=\text{Ni, Co \& Mn}$) and Metal molybdates (MMoO_4 ; $\text{M}=\text{Ni, Co, Mn \& Fe}$ and $\text{Bi}_2\text{O}_3 \cdot n\text{MoO}_3$; $n=1, 2 \& 3$) for sodium ion supercapacitors

Year of award: 2014

Ongoing-Nil

Completed-16

M.Elizabeth

Title of the thesis: Sonochemical Synthesis and Characterization of $\text{NiW}_{1-x}\text{Mo}_x\text{O}_4$ ($x=0, 0.5, 1$) nanoparticles

Year of award: 2019

M.Jaya

Title of the thesis: Magnetic properties of CoMn_2O_4 synthesized by sol-gel auto combustion method

Year of award: 2016

B.Ramkumar

Title of the thesis: Synthesis and characterization of $\text{LiCo}_{1/3}\text{Ni}_{1/3}\text{Mn}_{1/3}\text{O}_2$ and its applications in Li-ion hybrid supercapacitors

Year of award: 2016

K. Pandi

Title of the thesis: Fabrication and performance analysis of fiber type symmetric supercapacitor using biomass-derived activated carbon

Year of award: 2016

P. Rupa Kasturi

Title of the thesis: Platinum supported biomass-derived carbon for direct methanol fuel cell applications

Year of award: 2015

Gowri Meena

Title of the thesis: Electrical, Electrochemical Hydrogen evolution reaction (HER) and corrosion studies of ZnWO_4 nanoparticles: Comparison between co-precipitation and Hot injection methods

Year of award: 2014

B.Hanitha

Title of the thesis: Effect of pH on the sonochemical synthesis of BiPO_4 nanostructures and its physicochemical and electrochemical properties for Pseudocapacitors

Year of award: 2014

Y.Sudha

Title of the thesis: Synthesis, structural, Magnetic, electrical and electrochemical properties of $\text{LiFe}_{0.9}\text{M}_{0.1}\text{P}_2\text{O}_7$ (M=Fe, Co, Mn, Ni & Cr) for cathodes in Aqueous Li-ion batteries

Year of award: 2013

R.Murugeswari

Title of the thesis: Effect of Zr^{4+} ions on the structural, electrical and electrochemical properties of $\text{La}_2\text{Sn}_2\text{O}_7$ particles

Year of award: 2013

A. Rajalakshmi

Title of the thesis: Effect of V^{5+} doping on the structural and electrochemical properties of LiCoPO_4 as cathode materials for Li-ion batteries

Year of award: 2012

S. Kaviselvi

Title of the thesis: Synthesis and Characterization of polyaniline by reflux assisted chemical oxidative polymerization method

Year of award: 2012

K. Vijayasankar

Title of the thesis: Microwave synthesis of spherical Mn_3O_4 nanoparticles and its electrochemical properties

Year of award: 2012

S. Saranya

Title of the thesis: Synthesis, structural, electrical and electrochemical properties of organic-Inorganic hybrid based Polyaniline/MnWO₄ nanocomposites

Year of award: 2011

S. Sharmila

Title of the thesis: Synthesis and Characterization of polyhedral shaped Li₄Ti_{5-x}M_xO₁₂ (M=Mn, Sn and Si)(x=0.05 and 0.1) for novel negative electrodes in Li-ion batteries

Year of award: 2010

M. K. Satheesh Kumar

Title of the thesis: Synthesis and Characterization of LiNi_{0.95}M_{0.05}PO₄ (M=Fe, Mg, Cr, Cu, Co, Sr and Zn) nanoparticles for positive electrodes in Li-ion batteries

Year of award: 2010

P. Thenamirtham

Title of the thesis: Effect of surfactants on the synthesis of polythiophene and its structural and electrochemical properties

Year of award: 2010

Ongoing

Completed-30

Vignesh

Title of the thesis: Electrochemical Impedance Spectroscopic studies of biomass-derived activated carbon electrode

Year of award: 2019

S. Arun Kumar

Title of the thesis: Combustion Synthesis and characterization of MgFe₂O₄ Particles

Year of award: 2019

M. Kayathiri

Title of the thesis: Structural and Magnetic Properties of LiNiPO_4 synthesised by Combustion Method

Year of award: 2019

B. Parvathy

Title of the thesis: Effect Dy^{3+} on the Magnetic Properties of GdMnO_3

Synthesised by Hot Injection Method

Year of award: 2019

S. Shalini

Title of the thesis: Sonochemical Synthesis, electrical and dielectric Properties of NiWO_4 nanoparticles

Year of award: 2019

T. Priyadarshini

Title of the thesis: Synthesis and Magnetic Properties of CoMn_2O_4 by Sol-gel Combustion method

Year of award: 2018

K. Athira

Title of the thesis: Sonochemical Synthesis and Characterization of NiWO_4 and NiMoO_4 Particles

Year of award: 2018

V. Shobin Vijay

Title of the thesis: Synthesis and Ferroelectric Properties of GdMnO_3 Particles Synthesized by Hot Injection Method

Year of award: 2018

R. Rakiraj

Title of the thesis: Preparation and Characterization of Activated carbon from the biomass of *Cereus Pterogonus*

Year of award: 2016

S.Senthamil Selvan

Title of the thesis: Nelumbo Lucifera Stalks derived activated carbon and its characterization

Year of award: 2016

T. Kavipriya

Title of the thesis: Microwave-assisted Combustion Synthesis of $\text{BaFe}_{12}\text{O}_{19}$ and its Magnetic Properties

Year of award: 2016

S. Shanmugapriya

Title of the thesis: Sonochemical synthesis and electrical properties of CoWO_4 nanoparticles

Year of award: 2015

S.Ramesh

Title of the thesis: Hydrothermal synthesis and characterization of beta - ZnMoO_4 particles

Year of award: 2015

N.Rajeesh Kumar

Title of the thesis: Synthesis and magnetic properties of polyhedral shaped ZnMn_2O_4

Year of award: 2015

P.Bharathi

Title of the thesis: Sonochemical synthesis and characterisation of NiWO_4 nanoparticles

Year of award: 2014

K. Pandi

Title of the thesis: preparation of activated carbon from agave Americana for solid-state electric double layer capacitor

Year of award: 2014

R.Hari Vignesh

Title of the thesis: polymer assisted combustion synthesis of MnFe_2O_4 nanoparticles and its electrochemical properties for pseudocapacitors

Year of award: 2014

B. Vyshnavi

Title of the thesis: Synthesis and Characterization of ZnWO_4 nanoparticles

Year of award: 2013

S. Yuvaraj

Title of the thesis: Electrical and magnetic properties of SmFeO_3 by

Combustion method

Year of award: 2013

B.Surendran

Title of the thesis: Structural, optical and electrical properties of NiS particles synthesized by simple polyol method

Year of award: 2013

V.Veeramani

Title of the thesis: Electrical conductivity properties of Cu^{2+} doped NiWO_4 nanoparticles

Year of award: 2012

A.Saiadali Fathima

Title of the thesis: Molten salt synthesis and Characterization of NiTiO_3 microcrystals

Year of award: 2012

A.Saravanan

Title of the thesis: Electrical and magnetic properties of NdVO_4 nanoparticles synthesised by novel sonochemical method

Year of award: 2012

V. Vasanthi

Title of the thesis: Microwave-assisted combustion synthesis of CdFe_2O_4 and its characterizations

Year of award: 2011

K.Shobana

Title of the thesis: Synthesis and characterization of LiNiPO_4 and $\text{LiNiP}_{0.9}\text{Si}_{0.1}\text{O}_4$

Year of award: 2011

C.Sekar

Title of the thesis: Combustion Synthesis and characterization of alpha- MnMoO_4 nanoparticles

Year of award: 2011

P.Vinoth Babu

Title of the thesis: Molten salt synthesis and Characterization of NiFe_2O_4

Year of award: 2010

R.Jacob Immanuel

Title of the thesis: Synthesis and characterization of $\text{LaCr}_{0.5}\text{M}_{0.5}\text{O}_3$ (M=Cu, Fe, Mo) by sol-gel method

Year of award: 2010

S. T. Senthilkumar

Title of the thesis: Activated carbon derived from Sorghum Pith as electrodes for electrochemical capacitors

Year of award: 2010

A.Manopriya

Title of the thesis: Synthesis of CdWO_4 by co-precipitation method and its structural and electrical properties

Year of award: 2010

V.D.Nithya

Title of the thesis: Effect of surfactants on the synthesis and characterization of FeVO_4 Nanoparticles

Year of award: 2010

Research Publication

- [International](#)
- [National](#)
- [Patents](#)
- [Conferences](#)
- [Books/Chapters](#)
- [Database](#)

Reverse Chronological Order

2022

155. [Experimental and Theoretical Analysis of Synthesized Poly-\(phtalazinone ether sulfone ketone\) Copolymer Modified Separators for Li-S Batteries](#)
T. Mathivanan, Subrata Dolui, P. Nandhini, K.Rajkumar, L. Senthilkumar, Sanjib Banerjee, **R. Kalai Selvan**
ChemElectroChem, 9, e202200561 (2022)
154. [Improved electrocatalytic properties of bundled B/N co-doped electrospun carbon nanofibers with Pt nanostructures through dopant-induced metal-support interaction \(DIMSI\).](#)
S.Shanmugapriya, Pei Zhu, M.Ganeshbabu, Yun Sung Lee, Xiangwu Zhang, **R. Kalai Selvan**
Materials Science and Engineering B, 284, 115880 (2022)
153. [Enhancement of electrochemical performances of Li-S batteries using PPESK and *Nelumbo nucifera* derived porous carbon modified separator](#)
T. Mathivanan, P. Nandhini, Subrata Dolui, L. Senthilkumar, Sanjib Banerjee, **R. Kalai Selvan**
Materials Letters, 315, 131935 (2022)
152. [Synthesis and electrochemical properties of crystalline \$K_{0.7}MnO_2\$ particles for K-ion batteries](#)
N.Prasanna Naga Puneeth, S.D.Kaushik, **R.Kalai Selvan**
Materials Letters, 316, 131997 (2022)
151. [X-ray diffraction, magnetic measurements and Mössbauer spectroscopy of \$MgFe_2O_4\$ nanoparticles](#)
M.V. Ushakov, V.D.Nithya, N.Rajeesh Kumar, S. Arunkumar, A.V.Chukin, **R.Kalai Selvan**, M.I. Oshtrakh
Journal of Alloys and Compounds, 912, 165125 (2022)
150. [Mössbauer Spectroscopy with a High Velocity Resolution in the Studies of Nanomaterials](#)
I.V.Alenkina, M.V.Ushakov, P.C.Morais, **R.Kalai Selvan**, E.Kuzmann, Z.Klencsar, I.Felner, Z.Homonnay, M.I.Oshtrakh
Nanomaterials, 12, 12213748 (2022)
149. [Green synthesis of multifunctional carbon quantum dots: An approach in cancer theranostics](#)

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

2021

148. [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](#)

P. Rupakasturi, T. K. Aparna, A. Agnes Lincy, L. Senthilkumar, R. Sivasubramanian, Y. S. Lee, **R. Kalai Selvan**
Materials Chemistry and Physics, 260, 124094 (2021)

147. [Preparation of sponge-like porous carbon from Ficus Religiosa leaf and its K-ion intercalation properties](#)

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

146. [A sustainable green synthesis of functionalized biocompatible carbon quantum dots from *Aloe barbadensis* miller and its multifunctional applications](#)

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

145. [Microwave-assisted green synthesis of fluorescent carbon quantum dots from Mexican Mint extract for \$\text{Fe}^{3+}\$ detection and bio-imaging applications](#)

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

144. [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](#)

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

143. [Understanding the relationship between the local crystal structure and the ferrimagnetic ordering of \$\text{Co}_x\text{Mn}_{3-x}\text{O}_4\$ \(\$x = 0 - 0.5\$ \) solid solutions](#)

N.Rajeesh Kumar, Leonid Vasylechko, S.Shailja, C.S.Yadav, **R.Kalai Selvan**

Journal of Alloys and Compounds 853, 157256 (2021)

2020-2003

142. [Exchange interactions and the nature of magnetic ordering in \$\text{Zn}_{0.6}\text{Mn}_{2.4}\text{O}_4\$ particles](#)

N.Rajeesh Kumar, **R.Kalai Selvan**, Leonid Vasylechko, S.Saravanan, M. S. Seehra

Physica B: Condensed Matter 599, 412460 (2020)

141. [Sonochemical Synthesis, Structural, Electrical Transport and Magnetic Properties of \$\text{NiWO}_4\$ Nanoparticles](#)

S. Shanmugapriya, V. D. Nithya, A.Rajalakshmi, K. S. Sivaranjani, S. Shalini, P. Bharathi, P. Rupa Kasturi, **R. Kalai Selvan**

Journal of Materials Science: Materials in Electronics 31, 15616–15626 (2020)

140. [Potassium-ion intercalation in anti-NASICON-type iron molybdate \$\text{Fe}_2\(\text{MoO}_4\)_3\$](#)

B.Senthilkumar, **R. Kalai Selvan**, Prabeer Barpanda

Electrochemistry Communications 110, 106617 (2020)

139. [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](#)

P. Rupa Kasturi, R.Hari Vignesh, Y. S. Lee, **R.Kalai Selvan**

Journal of Colloid and Interface Science 561, 358-371 (2020)

138. [Electrocatalytic Hydrogen Evolution Reaction Studies of \$\text{NiW}_{1-x}\text{Mo}_x\text{O}_4\$ \(\$x = 0.0, 0.5\$ and \$1.0\$ \) nanoparticles in both acid and alkaline electrolytes](#)

P.Rupa Kasturi, S.Shanmugapriya, M. Elizabeth, K. Athira, **R.Kalai Selvan**

Journal of Materials Science: Materials for Electronics 31, 2378-2387 (2020)

137. [Reentrant spin-glass behaviour in highly frustrated Mn-rich spinel zinc manganate](#)

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

136. [Hydrothermally derived porous carbon and its improved electrochemical performance for supercapacitors using redox additive electrolytes](#)

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

135. [Hexanedioic Acid Mediated in-situ Functionalized Interconnected Graphitic 3D Carbon Nanofibers as Pt Support for Trifunctional Electrocatalysts](#)

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

134. [Hydrothermal deposition of CoS nanostructures and its multifunctional applications in Supercapattery and Water electrolyser](#)

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

133. [Hydrothermally synthesised NiCoP nanostructures and electrospun N-doped carbon nanofiber as multifunctional potential electrode for hybrid water electrolyser and supercapatteries](#)

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

132. [Synthesis and electrochemical performances of \$\square\$ -KCoPO₄ nanocrystals as a promising electrode for aqueous supercapatteries](#)

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

131. [Magnetic properties of CoMn₂O₄ synthesized by auto combustion method](#)

N. Rajeesh Kumar, P. Rupa Kasturi, J. Jaya, P. Saravanan, Yun Sung Lee, Danielle Meyrick, **R. Kalai Selvan**

130. [Bio-derived carbon as an efficient supporting electro-catalyst for oxygen reduction reaction](#)

P.Rupa Kasturi, A.Arunchandar, D.Kalpana, **R.Kalai Selvan**

Journal of Physics and Chemistry of Solids 124, 305-311 (2019)

129. [Preparation of starch-based porous carbon electrode and biopolymer electrolyte for all solid-state electric double layer capacitor](#)

P. Rupa Kasturi, R. Hari Vignesh, Danielle Meyrick, Yun Sung Lee, **R.**

Kalai Selvan

Journal of Colloid and Interface Science 554, 142-156(2019)

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

S.Shanmugapriya, S.Surendran, Yun Sung Lee, **R.Kalai Selvan**

Applied Surface Science 492, 896-908(2019)

127. [Multifunctional high-performance electrocatalytic applications of Nb₂O₅ incorporated carbon nanofibers as Pt support catalyst](#)

S.Shanmugapriya, Pei Zhu, Choayi Yan, Abdullah M. Asiri, Xiangwu

Zhang, **R.Kalai Selvan**

Advanced Materials Interfaces 6, 1900565 (2019)

126. [Ni₂P₂O₇ microsheets as an Efficient Bi-functional Electrocatalysts for Water Splitting Application](#)

S. Surendran, A. Sivanantham, S. Shanmugam, Uk Sim, **R. Kalai**

Selvan

Sustainable Energy & Fuels 3, 2435-2446 (2019)

125. [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](#)

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

Advanced Fiber Materials 1, 46-60 (2019)

124. [Electrospun Carbon Nanofibers Encapsulated with NiCoP: A Multifunctional Electrode for Supercapattery and Oxygen Reduction, Oxygen Evolution, and Hydrogen Evolution Reactions](#)

S. Surendran, S. Shanmugapriya, A.Sivanantham, S.Shanmugam, **R.**

Kalai Selvan

Advanced Energy Materials 8, 1800555 (2018)

123. [Growth and characterization of three dimensional flower-like \$\beta\$ -NiS on carbon cloth: A dexterous and flexible electrode for supercapattery and water splitting applications](#)

S.Surendran, **R.Kalai Selvan**

Advanced Materials Interfaces 5, 1701056 (2018)

122. [Interweaved nickel phosphide sponge as a multifunctional electrode for flexible supercapattery and water splitting applications](#)

S. Surendran, S. Shanmugapriya, S. Shanmugam, V.Leonid, **R. Kalai**

Selvan

ACS Applied Energy Materials 1, 78-92 (2018)

121. [Carbon enriched cobalt phosphide with assorted nanostructure as a multifunctional electrode for energy conversion and storage devices](#)

S. Surendran, S. Shanmugapriya, Yun Sung Lee, Yk Kim, **R. Kalai**

Selvan

ChemistrySelect 3, 12303-12313 (2018)

120. [Morphology-dependent electrochemical properties of \$\text{LiCoPO}_4\$ for aqueous hybrid capacitors](#)

N. Priyadharsini, S.Shanmugapriya, P.Rupa Kasturi, S.Surendran, **R.**

Kalai Selvan

Electrochimica Acta 289, 516-526 (2018)

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Reverse Chronological Order

2021

2020-2013

Alumini Reflections: