

Faculty Profile of Dr. P. Sakthivel



Dr. P. Sakthivel

Professor

Department of Nanoscience and Technology

Email:sakthivel.p@buc.edu.in

Research Area

- Nano materials synthesis and characterization, Nanocomposites and Porous carbon materials, Capacitive Deionization,
- Organic Solar Photovoltaic Cells, Synthetic Organic Chemistry.
- Polymers Synthesis and Characterization , Organic Light Emitting Diodes, Supercapacitor

Education & Career

Education

Ph. D.

Subject : Polymer/Organic Chemistry

Institution : Anna University

Affiliated University : Anna University

Year of Award : 2005

M.Phil.,

Subject : Organic Chemistry

Institution : University of Madras

Affiliated University : University of Madras

Year of Award : 2001

M. Sc.,

Subject: Chemistry

Institution : Bharathiar University

Affiliated University : Bharathiar University

Year of Award : 2000

B. Sc.,

Subject: Chemistry

Institution: University of Madras

Affiliated University: University of Madras

Year of Award: 1998

Career

At Bharathiar University (Reverse Order)

Professor : November 2016 to Till Date

Past Experience

Associate professor: September 2013 to November 2016 at Organic Chemistry Division, SAS, VIT University, Vellore-14

Postdoc-(Sabbatical leave from VIT) Research: September 2011 to February 2013 at Pusan National University(PNU), South Korea

Assistant Professor(Sr): July 2009 to August 2013 at Organic Chemistry Division, SAS, VIT University, Vellore-14

Contract Professor: March 2008 to February 2009 at Pusan National University(PNU), South Korea

Postdoc-Research: September 2007 to February 2008 at National Research Lab, Solvay company project, PNU, South Korea

Postdoc-Research: September 2006 to August 2007 at National Research Lab, BK21, PNU, South Korea

Postdoc-Research: November 2005 to September 2006 at Nano Informational Material Lab, GSNU, South Korea

Awards

1 CSIR

Country : India

Purpose of award : CSIR Senior Research Fellowship

Year of Award : 2002

2 BK21,

Country : South Korea

Purpose of award : South Korea Post-Doctoral fellowship

Year of Award : 2007

3 VIT University- Vellore,

Country : INDIA.

Purpose of award : India Research Awards, for Research

Year of Award : 2012

4 VIT University- Vellore,

Country : INDIA.

Purpose of award : India Research Awards, for Research

Year of Award : 2013

5 Research Awards, for Research

Country : India

Purpose of award : VIT University- Vellore, INDIA.

Year of Award : 2014

6 Research Awards, for project

Country : India

Purpose of award : VIT University- Vellore, INDIA.

Year of Award : 2015

7 Research Awards, for Research

Country : India

Purpose of award : VIT University- Vellore, INDIA.

Year of Award : 2016

8 Doctoral Student Best Poster Award (R. Ganeshamoorthy)

Country : India TS-2014

Purpose of award : IIT- Madras

Year of Award : 2014

9 Doctoral Student Best Poster Award(G. Sathiyam)

Country : India ETCM-2015

Purpose of award : Thiruvalluvar University- Vellore

Year of Award : 2015

10 Reviewing Award

Country : Netherland

Purpose of award : Journal of Power source

Year of Award : 2016

11 Reviewing Award

Country : Netherland

Purpose of award : Synthetic metals

Year of Award : 2016

12 Doctoral Student Best Oral Award (N. Venkatesh)

Country : India RTC'19-

Purpose of award : SRMVCAS-Coimbatore

Year of Award : 2019

Membership

Professional Bodies

Korean Chemical Society

Type of Membership : Life time member

Period : Nov 2005

Royal Society of Chemistry

Type of Membership :Member

Period : May 2014

Society for Advancement of Chemical Sciences

Type of Membership : Member

Period : Nov 2013

Academic Bodies

Alagappa University

Board of Studies in Energy Science

Period: 2017 -Still

Bharathiar University

Board of Studies

Period: 2017 –Still

Bharathiar University

M.phil/Ph.D selection

Period: 2017 –Still

RVS College of Arts & Science, Sulur

University Nominee for Academic Council

Period:2017-2019

Vellalar College, Erode

University Nominee for Academic Council

Period:2017-2019

Sree Saraswathi Thyagaraja College, Pollachi

University Nominee for Academic Council

Period : 2017-2019

Dr. SNS Rajalakshmi College of Arts &Science

University Nominee for Governing Body

Period : 2017-2019

VIT University

Question Paper setting Board

Period: 2009-2016

VIT University

Selection Committee

Period:2015-2016

VIT University

Experts Committee

Period: 2010-2016

VIT University

DC Member

Period:2009

Periyar University

DC Member

Period: 2017

Bharathiar University

DC Member

Period:2016

Visits

1. Post Doctoral Fellowship: November 2005 to February 2009 in South Korea

2. Post Doctoral Fellowship: September 2011 to February 2013 in South Korea

Collaborators

Others

Projects

Funded Projects (National Level)

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

Ongoing Projects List with necessary Information

Completed Projects List with necessary Information

1. TITLE OF THE PROJECT: Synthesis and studies of Novel Perylene Diimide Derivatives for Organic Photovoltaic Application PRINCIPLE

INVESTIGATOR: Dr. P. Sakthivel

NAME OF THE FUNDING AGENCY: DST-Fast Track

TIME PERIOD: 2013-2016

SANCTIONED AMOUNT: 14.02 Lakhs

2. TITLE OF THE PROJECT: Synthesis, Characterization, and Studies of Novel Poly[Thieno(Indenoindole)] Based Low Band Gap Polymers for Organic Solar Cell Applications
PRINCIPLE INVESTIGATOR: Dr. P. Sakthivel
NAME OF THE FUNDING AGENCY: DST-SERI
TIME PERIOD: 2015-2018
SANCTIONED AMOUNT: 41.90 Lakhs

3. TITLE OF THE PROJECT: Removal of Heavy Metals from Industrial Effluents Using Nano Activated Carbon Prepared Using Agro Based Materilas
PRINCIPLE INVESTIGATOR: Dr. P. Sakthivel
NAME OF THE FUNDING AGENCY: RUSA 2.0
TIME PERIOD: Feb 2020- June 2020
SANCTIONED AMOUNT: 6.0 Lakhs

Consultancy Projects

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

Ongoing Consultancy Project Informations

Completed Consultancy Project Informations

Research Guidance

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

Ongoing

Title

Name

Completed

Title

Name

Ongoing

Sample Data.

Completed

1 Dr. S. Karpagam

Synthesis and Characterization of nitrogen and oxygen heterocyclic compounds

2011

2 Dr. G. Sathiyam

Synthesis and studies of carbazole based D-A type polymer and small molecules for fluorescence and organic solar cell applications

2017

Ongoing

Sample Data.

Completed

Sample Data.

Ongoing

Sample Data.

Completed

1.Nalineeth Kanth Kadiyala

08MSH030 Synthesis and Characterization of luminescent Bioactive Glasses

2010

2.Tammineni Eshwar Reddy

08MSH060 Synthesis of Precursors of Analogues of CDC
2010

3.Priyanka

08MSH039 Synthesis of Heterocyclic compounds
2010

4.Sireesh Babu Maddinedi

08MSH052 Synthesis of Peptide Nucleic Acid Monomer
2010

5.Mathi Gangadhar Rao

09MSH018 Synthesis of fluorene derivatives for organic solar cell
applications
2011

6.PothiNi Suman

09MSH031 Synthesis of Bis(Trifluoromethanesulfonyl)Imide
2011

7.Janardan Sannapaneni

08MSH017 Synthesis of Indenofluorene Monomer for Photovoltaic
Applications
2011

8.K. Ramakrishnan

14MSH0026 Synthesis of Carbazole based Small molecules for Organic
Solar Cell
2016

9.R. Kumaresan

14MSH0038 Synthesis and Studies of Thiophene Substituted Perylene
Diimide D-A-D Type Small Molecules for Organic Solar Cell Application
2016

10.S. Muthupandi

14MSH0032 Synthesis and Characterization of soluble perylene diimide
polymer derivatives for organic Solar cell Applications
2016

11.GOBINATH M

15NSTA06 Study of Physiochemical properties of Iron Complex for Intravenous drug Delivery Application
2017

12.K. Sabarish

16NSTA10 Synthesis and Characterization of SnS doped CdS Nanoparticles and Photocatalytic Activity
2018

13.Ms. A. Rajapriya

16NSTA08 Tuning of Optical Band gap and enhancing the photocatalytic Activity by SnS Doped Zinc Sulfide
2018

14.Mr. Aravidan

16NSTA05 Synthesis and characterization of Sn-Doped ZnO Nanoparticles for Efficient Sunlight-Driven Photocatalysis
2018

15.C. Gowtham

17PCH1233 Design And Synthesis of a Carbazole Derivative as a Fluorescent Chemosensor for Detection of Heavy Metals
2019

16.Ms. M..Sri Varshini,

17NSTA21 Synthesis, Characterization and Biological Study of Metal Organic Framework of Schiff Base Derived from 3-Formyl Chromone and p-Toluene Sulfonyl Hydrazide
2019

17.Ms. T. Deivendrarani

17NSTA09 Synthesis and Characterization of Mn Doped NiO Nanoparticles for Electrochemical sensing of Caffeic acid
2019

Research Publication

- [International](#)
- [National](#)

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

1.Title : [Silver decorated CeO₂ nanoparticles for rapid photocatalytic degradation of textile rose bengal dye,](#)

Authors Name: G. Murugadoss, D. Dinesh Kumar, M. Rajesh Kumar, N. Venkatesh, P.Sakthivel,

Journal Name: Scientific Reports , 1, 1080-1092 (2021).

2.Authors Name : N.Venkatesh, S. Aravindan,K. Ramki,G. Murugadoss R. Thangamuthu, and P. Sakthivel,

Journal Name: [Environmental Science and Pollution Research, 28, 16729-16803 \(2020\).](#)

3.Title: [Visible light-driven photocatalytic dye degradation under natural sunlight using Sn-doped CdS nanoparticles,](#)

Authors Name : N. Venkatesh, K. Sabarish, G. Murugadoss, R. Thangamuthu, and P. Sakthivel,

Journal Name: Environmental Science and Pollution Research, 27:43212-43222 (2020).

4.Title: [Synthesis of Ag₂O-SnO₂ and SnO₂-Ag₂O nanocomposites and investigation on photocatalytic performance under direct sun light,](#)

Authors Name : M.R. Kumar, G. Murugadoss, N. Venkatesh, and P. Sakthivel,

Journal Name: Chemistry Select , 23, 6946-6953 (2020).

5.Title : [Rapid degradation of organic dyes under sunlight using tin-doped ZnS nanoparticles,](#)

Authors Name : K. Ramki, A. RajaPriya, P.Sakthivel, G. Murugadoss, R. Thangamuthu, and P. Sakthivel,

Journal Name: Journal of Materials Science: Materials in Electronics, 31, 8750-8760 (2020).

6.Title: [A novel electrochemical platform based on indenoindole for selective detection of Cu²⁺ ions in punica granatum fruit juice,](#)

Authors Name : K. Ramki, and P. Sakthivel,

Journal Name: Journal of Electroanalytical Chemistry, 861, 113936-113944 (2020).

7.Title: [A comprehensive review on the reasons behind low power conversion efficiency of dibenzo derivatives based donors in bulk heterojunction organic solar cells,](#)

Authors Name : K. Ramki, N. Venkatesh, G. Sathiyar, R. Thangamuthu, and P. Sakthivel,

Journal Name: Organic Electronics, 73, 182-204 (2019).

8.Title: [Synthesis and spectral characterization of D-A based cyano-stilbene derivatives for organic solar cell applications](#)

Authors Name : R. Ganesamoorthy, and P. Sakthivel,

Journal Name: Asian Journal of Chemistry, 31, 2337-2340 (2019).

9.Title: [Design and chemical engineering of carbazole-based donor small molecules for organic solar cell applications,](#)

Authors Name : G Sathiyar, G. Siva, J. Prakash, HC. Swart, and P. Sakthivel,

Journal Name: Journal of Materials Science: Materials in Electronics, 29, 14842-14851(2018).

10.Title: [Synthesis and studies of carbazole-based donor polymer for organic solar cell applications,](#)

Authors Name : G. Sathiyar, and P. Sakthivel,

Journal Name: Colloid and Polymer Science, 296, 1193-1203 (2018).

11.Title: [Synthesis, characterization of bay-substituted perylene diimide based D-A-D type small molecules and its applications as a non-fullerene electron acceptor in polymer solar cells,](#)

Authors Name : R. Ganesamoorthy, R. Vidya, K. Ramki, and P. Sakthivel,

Journal Name: Journal of Science: Advanced Materials and Devices, 3, 99-106 (2018).

12.Title: [Synthesis and spectroscopic characterization of bay-substituted perylene diimide-based D-A-D-type small molecule acceptors for OSC and antimicrobial applications](#)

Authors Name : R. Ganesamoorthy, R. Vidya, P. Sakthivel,

Journal Name: IET Nanobiotechnology, 12, 147-155 (2018).

13.Title: [Perylene-diimide based donor-acceptor-donor type small-molecule acceptors for solution-processable organic solar cells,](#)

Authors Name : R. Ganesamoorthy, R. Vijayaraghavan, and P. Sakthivel,

Journal Name: Journal of Electronic Materials, 46, 6784-6794 (2017).

14.Title: [Synthesis and characterization of triazine linked carbazole derivatives green-light-emitting molecule](#)

Authors Name : G. Sathiyar, and P. Sakthivel,

Journal Name: Dyes and Pigments, 143, 444-454 (2017)..

15.Title: [Review: Fullerene based acceptors for efficient bulk heterojunction organic solar cell applications,](#)

Authors Name : R. Ganesamoorthy, G. Sathiyar, and P. Sakthivel,

Journal Name: Solar Energy Materials & Solar Cells, 161, 102-148 (2017).

16.Title: [Synthesis and characterization of bay substituted perylene diimide small molecule for organic solar cell application,](#)

Authors Name : R. Ganesamoorthy, G. Sathiyar, R. Thangamuthu, and P. Sakthivel,

Journal Name: Recent Trends in Materials Science and Applications, 189, 401-415, (2017).

17.Title: [Bay functionalized perylene diimide with pyridine positional isomers: NIR absorption and selective colorimetric/fluorescence sensing of Fe³⁺ and Al³⁺ ions,](#)

Authors Name : A. Kundu, J. Pitchaimani, V. Madhu, P. Sakthivel, R. Ganesamoorthy, S. Philip Anthony,

Journal Name: Journal of Fluorescence, 27, 491-500 (2017).

18.Title: [Synthesis of carbazole-based copolymers containing carbazole-thiazolo\[5,4-d\] thiazole groups with different dopants and their fluorescence and electrical conductivity applications,](#)

Authors Name : G. Sathiyar, R. Thangamuthu, P. Sakthivel,

Journal Name: RSC Advances, 6, 69196-69205 (2016).

19.Title: [Review of carbazole based conjugated molecules for highly efficient organic solar cell applications,](#)

Author Name : G. Sathiyar, E.K.T. Sivakumar, R. Ganesamoorthy, R. Thangamuthu, and P. Sakthivel,

Journal Name: Tetrahedron Letters, 57, 243-252 (2016).

20Title: [A multibranched carbazole linked triazine based fluorescent molecule for the selective detection of picric acid,](#)

Authors Name : G. Sathiyar, P. Sakthivel,

Journal Name: RSC Advances, 6, 106705-106715 (2016).

21.Title: [Highly efficient performance of activated carbon impregnated with Ag, ZnO and Ag/ZnO nanoparticles as antimicrobial materials,](#)

Authors Name : TR. Prashantha Kumar, T.K.M. Mandlimath, P Sangeetha, and P. Sakthivel,

Journal Name: RSC Advances, 5, 108034-108043 (2015).

22.Title: [Synthesis of new carbazole subTitled fullerene derivative as an electron acceptor for bulk heterojunction organic photovoltaic cell applications,](#)

Authors Name : SKA Kumar, R. Thangamuthu, SH. Jin, and P. Sakthivel,

Journal Name: J. Indian Chem. Soc, 92, 937-939 (2015)

23Title: [Triphenylmethane dye-doped gtin films for low-power optical phase-conjugation,](#)

Authors Name : T. Geethakrishnan, P. Sakthivel, and P. K. Palanisamy,

Journal Name: Optics Communications, 335, 218-223 (2015).

24.Title: [Carbazole linked phenylquinoline-based fullerene derivatives as acceptors for bulk heterojunction polymer solar cells: effect of interfacial contacts on device performance,](#)

Authors Name : P. Sakthivel, K. Kranthiraja, C. Saravanan, K. Gunasekar, H.Kim, W.Shin, J.Jeong, .Woo, and SH. Jin,

Journal Name: Journal of Material Chemistry A, 2, 6916-6921 (2014).

25.Title: [Synthesis and characterization of new indeno\[1,2-b\]indole-co-benzothiadiazole-based \$\pi\$ -conjugated ladder type polymers for bulk heterojunction polymer solar cells,](#)

Authors Name : P. Sakthivel, H.Song, C. Nallan, Jae Wook Lee, Yeong-Soon Gal, Sungu Hwang, and Sjin,

Journal Name: Polymer, 54, 4883-4893 (2013).

26.Title: [Synthesis and studies Titlehyl ester substituted thieno-o-quinodimethane fullerene multiadducts for polymer solar cells,](#)

Authors Name : P. Sakthivel, T.W. Ban, S. Kim, S.M. Kim, Y. S. Gal, E.A. Chae, W. S. Shin, S.J. M, J. C. Lee, and S. H. Jin,

Journal Name: Solar Energy Materials & Solar Cells, 113, 13-19 (2013).

27.Title: [Enhancement of processability, stability and photoluminescence performance of poly\(p- phenylene vinylene\) containing diazine heterocycle](#)

[unit](#)

Authors Name : S Karpagam, S. Guhanathan, and P. Sakthivel,

Journal Name: Fibers and Polymers, 13, 1105-1112 (2012).

28.Title: [Surface modification of indium-tin-oxide electrode for improved power conversion efficiency in polymer photovoltaic device,](#)

Authors Name : M. Yoon, SK. Ahn, P. Sakthivel, JW. Lee, YS. Gal, and SH. Jin,

Journal Name: Macromolecular Research, 20, 1105-1108 (2012).

29.Title: [Synthesis and characterization of novel crosslinkable poly\(propylenedioxythiophene\) derivative as a buffer layer for organic light-emitting diode applications,](#)

Authors Name : SK. Ahn, T. Ban, P. Sakthivel, JW. Lee, SH. Jin, YS. Gal, JK. Lee,

Journal Name: Macromolecular Research, 20, 459-464 (2012).

30.Title: [Development of dye-sensitized solar cells composed of liquid crystal embedded, electrospun poly\(vinylidene fluoride-co-hexafluoropropylene\) nanofibers as polymer gel electrolytes,](#)

Authors Name : SK. Ahn, T. Ban, P. Sakthivel, JW. Lee, YS. Gal, JK. Lee, MR. Kim, and SH. Jin,

Journal Name: ACS Applied Materials & Interfaces, 4, 2096-2100 (2012).

31.Title: [Studies on monobenzo 18-crownTitleer substituted phenylenevinylene oligomer: synthesis, photoluminescent, and dielectric properties,](#)

Authors Name : S. Karpagam, S. Guhanathan, and P. Sakthivel,

Journal Name: Polymer Bulletin, 68, 1023-1037 (2012).

32.Title: [Applications of wittig reactions in dibenzo 18-croTitlether substituted phenylenevinylene oligomer-synthesis, photo luminescent, and dielectric properties,](#)

Authors Name : S. Karpagam, S. Guhanathan, and P. Sakthivel,

Journal Name: Journal of Applied Polymer Science, 120, 960-967 (2011).

33.Title: [Synthesis and characterization of indenofluorene-based copolymers containing 2, 5-bis \(2-thienyl\)-N-arylpyrrole for bulk heterojunction solar cells and polymer light-emitting diodes,](#)

Authors Name : V. Tamilavan, P. Sakthivel, Y. Li, M. Song, CH. Kim, SH. Lin, and MH. Hyun,

Journal Name: Journal of Polymer Science Part A: Polymer Chemistry, 48, 3169-3177 (2010).

34.Title: [Preparation and application of a new ion-pairing chiral stationary phase for the liquid chromatographic resolution of N-\(3,5-Dinitrobenzoyl\)- \$\alpha\$ -amino acids,](#)

Authors Name : MH. Hyun, SN. Kim, HJ. Choi, and P. Sakthivel,

Journal Name: Journal of Liquid Chromatography & Related Technologies, 31, 2363-2374 (2008).

35.Title: [Liquid chromatographic resolution of N-\(3, 5-Dinitrobenzoyl\)- \$\alpha\$ -amino acids on a new chiral stationary phase: The first liquid chromatographic utilization of a double-ureide,](#)

Authors Name : MH. Hyun, SN. Kim, HJ. Choi, and P. Sakthivel,

Journal Name: Bulletin of The Korean Chemical Society, 28, 1980-1984 (2007).

36.Title: [An NMR chiral solvating agent for the chiral recognition of the two enantiomers of N-\(3, 5-Dinitrobenzoyl\)- \$\alpha\$ -amino acids,](#)

Authors Name : MH. Hyun, SN. Kim, HJ. Choi, and P. Sakthivel,

Journal Name: Bulletin of The Korean Chemical Society, 28, 1419-1421 (2007).

37.Title: [Thermotropic liquid crystalline-cum-photocrosslinkable poly \(benzylidene aryl phosphate ester\) s containing the cyclopentanone moiety](#)

Authors Name : P. Sakthivel, and P. Kannan,

Journal Name: Liquid Crystal, 33, 341-351 (2006).

38. Title :[Investigation on thermotropic liquid crystalline and photocrosslinkable polyarylidenearyl phosphate esters containing cyclohexanone units,](#)

Authors Name : P. Sakthivel, and P. Kannan,

Journal Name: Polymer 46, 9821-9830 (2005).

39.Title: [Thermotropic main-chain liquid-crystalline photodimerizable poly \(vanillylidenealkoxy alkyl phosphate ester\) sntaining a cyclopentanone moiety,](#)

Authors Name : P. Sakthivel, and P. Kannan,

Journal Name: Polymer International, 54, 1490-1497 (2005).

40.Title: [Novel thermotropic liquid crystalline-cum-photocrosslinkable polyvanillylidene alkyl/aryl phosphate esters,](#)

Authors Name : P. Sakthivel, and P. Kannan,

Journal Name: Journal of Polymer Science Part A: Polymer Chemistry, 42, 5215-5226 (2004).

41.Title: [Synthesis and characterization of thermotropic liquid crystalline poly \(azomethine ether\)](#)

Authors Name : P. Kannan, S. Raja, and P. Sakthivel,

Journal Name: Polymer, 43, 7895-7902 (2004).

National Publications - Reverse Chronological Order

Patent Info

Conference Info

Books & Chapters Related Info

Database Related Info

Alumini Reflections: