

Dr. Muthuchamy Murugavel

Address: Institute for Chemical Reaction Design and Discovery (ICReDD),
Hokkaido University, Kita 21 Nishi 10, Kita-ku, Sapporo, Hokkaido,
001-0021, Japan +81-11-706-9649

E-mail: murugavelaru@gmail.com

Date of birth: 27th December 1984

D. L. No: TN63Z20100004670



Education

PhD in Chemistry Indian Institute of Science Education and Research Bhopal, India	Dec 2010 – Sep 2016
Master of Science in Chemistry (MSc) Madurai Kamaraj University, India Organic, Inorganic, Physical and Analytical Chemistry Percentage – 72%	Jun 2008 – May 2010
Bachelor of Science in Chemistry (BSc) Gandhigram Rural University, India Organic, Inorganic, Physical Chemistry Percentage – 81%	Jun 2005 – Apr 2008
Diploma in Teacher Education District Institute of Educational and Training, India Challenges in India Education, Educational Psychology and Educational Management Percentage – 85.78%	July 2002 – Sep 2004
Higher Secondary Govt. Hr. Sec. School, India Tamil Nadu State board, Tamil Nadu, India Percentage – 91% Maths, Physics, Chemistry and Computer Science	June 2001 – Mar 2002

Thesis

PhD

Department of Chemistry
Indian Institute of Science Education and Research
Bhopal, India

Multi-metallic Modular Porphyrinoid Assemblies: Syntheses, Structure and Properties

- Synthetic strategies have been developed to design and synthesize of modular porphyrinoid assemblies
- A great deal of expertise has been picked up on metalloporphyrinoids
- Experience on UV-Vis, Fluorescence spectrometer, EPR, single crystal X-ray diffractometer and chi 1120A Potentiostat/bipotentiostat has been gained
- Familiarized with the analysis and interpretation of data from these techniques

Masters

Department of Organic Chemistry
Madurai Kamaraj University, India

Synthesis and characterization of 6-chloro-3-(4-(6-chloro-4-phenylquinolin-2-yl)phenoxy)-2, 4-diphenylquinoline

- Developed a synthetic strategy for the titled compound
- Performed several TLC studies to analyze the conversion
- Gained extensive knowledge in synthetic organic chemistry
- Acquired the skills in analyzing the IR, NMR, GC, HPLC and Mass results

Bachelors

Department of Chemistry
Gandhigram Rural University, India

- Molecular Modeling - Reviewed the literature related to the title and summarized into a thesis

Careers

National Postdoctoral Fellow

Jan 2017 – Jan 2019

School of Chemical Sciences
National Institute of Science Education and Research
Bhubaneswar, Odisha

- Porphyrinoids with polycyclic aromatic units
- Metallocarbaporphyrinoids: Syntheses, Structures and Properties
- Carbaporphyrinoids with dual aromaticity

WPI-Postdoctoral Fellow

April 2019 – present

Institute of Chemical Reaction Design and Discovery
Hokkaido University, Sapporo

Research Outline

Macrocycles are very intriguing due to their unique structures and abilities to bind with various guest species. The guest species might be organic compounds or multiple ions to be incorporated into the macrocycles via long-range non-covalent interactions. In general, the macrocycle interacts with the guest specie through the oxygen or nitrogen atoms. Here we propose the visual change of cyclic polyketones (O-donors) and isopyrazole cyclophanes (N-donors) by incorporating various cations and anions. Based on this primitive observation, the suitable host-guest pair will be chosen for co-crystallization. Finally, the origin of interactions will be investigated by spectral techniques and corroborated by theoretical calculations.

Awards

Best Poster award

In-house Symposium
Indian Institute of Science Education and Research Bhopal

CSIR-JRF

AIR: 59/1065

GATE-2010

Score	365
All India Rank	907/8056
Percentile	88.74

Membership of Professional Societies

*Member of Society of Porphyrins and Phthalocyanines
(2015-2016)*

Publications

- Ramana Reddy, R. V.; Basumatary, B.; **Murugavel, M.**; Keshav, K.; Raja Sekhar, A.; Sankar, J. *Chem. Sci.* **2018**, 130, 81.
- Adinarayana, B.; **Murugavel, M.**; Das, M.; Palepu, N. R.; Srinivasan, A. *Inorg. Chem.* **2018**, 57, 1840-1845.
- **Murugavel, M.**; Ramana Reddy, R. V.; Dey, D.; Sankar. *J. Chem. Eur. J.* **2015**, 21, 14280-14286.
- **Murugavel, M.**; Ramana Reddy, R. V.; Sankar. *J. RSc. Adv.* **2014**, 4, 13669-13672.
- Basumatary, B.; Kaloo, M. A.; Singh, V. K.; Mishra, R.; **Murugavel, M.**; Sankar. *J. RSc. Adv.* **2014**, 4, 28417-28420.
- Paul, N.; **Murugavel, M.**; Muthusubramanian, S.; Sriram, D. *Bioorg. Med. Chem. Lett.* **2012**, 22, 1643-1648.
- Rai, J.; Basumatary, B.; Bhandary, S.; **Murugavel, M.**; Sankar, J. *Dalton Trans.*, **2019**, 48, 7394-7402.
- Das, M.; Adinarayana, B.; **Murugavel, M.**; Nayak, S.; Srinivasan, A. *Org. Lett.* **2019**, 21, 2867-2871.
- Das, M.; Chitranshi, S.; **Murugavel, M.**; Adinarayana, B.; Suresh, C. H.; Srinivasan, A. *Chem. Commun.* **2020**, DOI: 10.1039/d0cc00214c.

Conferences

- Inter IISER NISER Chemistry Meet at National Institute of Science Education and Research, Bhubaneswar on Dec 2017
- International Conference on Porphyrins and Phthalocyanines at Nanjing, China on July 2016 (**Poster Presentation**)
- Workshop on Electronic Structure of Coordination Complexes (WESCC-2016) at IIT Bombay
- Inter IISER Chemistry Meet at Indian Institute of Science Education and Research, Thiruvananthapuram on Dec 2015 (**Oral Presentation**)
- International Conference on Modern Trends in Inorganic Chemistry at Jadavpur University, Kolkata on Dec 2015 (**Poster Presentation**)
- In-house Symposium (InTeRaCTIONS) at Indian Institute of Science Education and Research Bhopal on Sep 2015 (**Poster Presentation**)
- In-house Symposium (InTeRaCTIONS) at Indian Institute of Science Education and Research Bhopal on Aug 2014
- IX J-NOST Conference at Indian Institute of Science Education and Research Bhopal on Dec 2013
- Indo-German Conference on Complex Chemical Systems at Indian Institute of Science Education and Research Bhopal on Dec 2012

- International Conference on Chemistry and Complexity at Indian Association for the Cultivation of Science on Dec 2011

References

Dr. J. Sankar,
Associate Professor,
Department of Chemistry,
Indian Institute of Science Education and
Research Bhopal,
Bhopal Bypass Road, Bhauri,
Bhopal-462066
M.P. (India)
E-mail: sankar@iiserb.ac.in
Phone: +91-755-6692334
Mobile: +918878833000
Fax: +91-755-6692392

Prof. A. Srinivasan,
Office: FC301,
School of Chemical Sciences,
NISER Bhubhaneswar,
Jatni P.O. Khurda 752050
Odisha, India
E-mail: srini@niser.ac.in
Phone: +91-674-2304077
Mobile: +919668324153

Sapporo, Japan
April 2, 2020

(Muthuchamy Murugavel)