

Curriculum Vitae

Dr. Devarajulu Sureshkumar

Associate Professor

Ramanujan Fellow (DST, New Delhi)

Department of Chemical Sciences

Indian Institute of Science Education and Research Kolkata

Mohanpur 74146, Nadia, West Bengal, India. e-mail : suresh@iiserkol.ac.in (or) dturesh@gmail.com



PROFESSIONAL EXPERIENCE

- Feb 2015-till date Associate Professor (**Ramanujan Fellow**), Department of Chemical Sciences, IISER Kolkata, Mohanpur, Nadia, West Bengal, India.
- Oct 2013-Feb 2015 **JSPS Fellow (Pathway to University Positions in Japan)**. Prof. Masakatsu Shibasaki, Institute of Microbial Chemistry, Shinagawa-ku, Tokyo, Japan.
- April-Sept 2013 **IMC Senior Postdoctoral Fellow**. Prof. Masakatsu Shibasaki, Institute of Microbial Chemistry, Shinagawa-ku, Tokyo, Japan.
- April 2011-March 2013 **JSPS Postdoctoral Fellow**. Prof. Masakatsu Shibasaki, Institute of Microbial Chemistry, Shinagawa-ku, Tokyo, Japan.
- Oct 2010-March 2011 **IMC Postdoctoral Fellow**. Prof. Masakatsu Shibasaki, Institute of Microbial Chemistry, Shinagawa-ku, Tokyo, Japan.
- April 2010-Sept 2010 **Max-Planck Postdoctoral Fellow**. Prof. Wilhelm Boland, Department of Bioorganic Chemistry, Max-Planck-Institute for Chemical Ecology, Jena, Germany.
- April 2008-March 2010 **AvH Fellow (Alexander von Humboldt)**. Dr. Martin Klussmann and Prof. Benjamin List, Max-Planck-Institute for Köhlenforschung, Mülheim an der Ruhr, Germany.
- Sept 2007-March 2008 **Max-Planck Postdoctoral Fellow**. Dr. Martin Klussmann and Prof. Benjamin List, Max-Planck-Institute for Köhlenforschung, Mülheim an der Ruhr, Germany.

EDUCATION

- 2000-2007 **Ph. D. Synthetic Organic Chemistry**. Prof. S. Chandrasekaran, Department of Organic Chemistry, Indian Institute of Science, Bangalore, Karnataka, India. Thesis Title: "**Chemistry of Tetrathiomolybdate and Tetraselenotungstate: Studies on Aziridine and Epoxide Ring Opening Reactions**".
- 1998-2000 **M. Sc Organic Chemistry**, Department of Organic Chemistry, University of Madras, Guindy Campus, Chennai 600025, Tamil Nadu, India.
- 1994-1997 **B. Sc Chemistry**, University of Madras, Tamil Nadu, India.

AWARDS/FELLOWSHIPS

- **Early Career Research (ECR) Award 2017** - Science and Engineering Research Board (SERB) Government of India.
- **Ramanujan Fellowship 2016** - Department of Science and Technology, Government of India

- **Japan Society for the Promotion of Science Fellowship (JSPS)** - Postdoctoral Fellowship for Foreign Researchers (**Pathway to University Positions in Japan**) at the Institute of Microbial Chemistry, Tokyo, Japan. Oct **2013**.
- **IMC Fellowship** for a senior postdoctoral researcher at the Institute of Microbial Chemistry, Tokyo, Japan. April-Sept **2013**.
- **Japan Society for the Promotion of Science Fellowship (JSPS)** - Postdoctoral Fellowship for Foreign Researchers at Institute of Microbial Chemistry, Tokyo, Japan. April **2011**-March **2013**.
- **Max-Planck Fellowship** for postdoctoral research at the Department of Bioorganic Chemistry, Max-Planck-Institute for Chemical Ecology, Jena, Germany. April 2010- Sep 2010.
- **Alexander von Humboldt (AvH) Fellowship** for postdoctoral research at Max-Planck-Institute for Köhlenforschung, Mülheim an der Ruhr, Germany. April **2008**-March **2010**.
- **Max-Planck Fellowship** for postdoctoral research at the Max-Planck-Institute for Köhlenforschung, Mülheim an der Ruhr, Germany. Sept **2007**- March **2008**.
- **Senior Research Fellowship (SRF)** by Council for Scientific and Industrial Research, India (**2002-2004**).
- **Junior Research Fellowship (JRF)** by Council for Scientific and Industrial Research (CSIR), India (**2000**). Selected among the top 20% of awardees qualified in CSIR-JRF.
- Qualified in **Graduate Aptitude Test in Engineering (GATE)-2000 (98.25** percentile, All India 33rd rank).
- Awarded **Junior Research Fellowship (JRF)** by University Grant Commission (UGC), India (**1999**).
- **Prof. S. Swaminathan Endowment Lectureship and Prize, 2000**. For an outstanding student in M. Sc Organic Chemistry.

RESEARCH PUBLICATIONS

2023

40. An organo-photocatalyzed visible-light-driven multi-component approach for carbothioaryl/alkylation of activated alkenes via C(sp³)-H bond. Srinivasu, V.; Das, D.; † Ghosh, K. G.; † Garai, G.; Chandu, P.; **Sureshkumar, D***. *Org. Biomol. Chem.* **2023**, *Accepted*. († equal contribution)
39. Palladium-catalyzed Direct C(sp²)-H Cyanomethylation of Arylamides using Chloroacetonitrile. Garai, G.; **Sureshkumar, D***. *J. Org. Chem.* **2023**, *88*, 12755-12764.
38. Visible-Metal-Free Photoredox Four-Component Strategy to 1,3-Functionalized BCP Derivatives. Srinivasu, V.; Das, D.; Chandu, P.; Ghosh, K. G.; **Sureshkumar, D***. *Org. Lett.* **2023**, *25*, 5308-5313.
37. Photoinduced Cascade Difluoroalkylative Ring-Opening of Vinyl Cyclopropanes. Chandu, P.; Das, D.; Ghosh, K. G.; **Sureshkumar, D***. *Org. Lett.* **2023**, *25*, 2857-2862.
36. Visible-Light-Mediated Organophotocatalyzed C(sp³)-H Activation and Intramolecular Cyclization. Ghosh, K. G.; Pal, K.; Das, D.; Chandu, P.; **Sureshkumar, D***. *Syntlett* **2023**, *34*, 931-936. **Invited Article for the Special Issue on "Chemical Synthesis and Catalysis in India"**

2022

35. Diastereoselective palladium-catalyzed C(sp³)-H cyanomethylation of amino acid and carboxylic acid derivatives. Garai, G.; Ghosh, K. G.; Biswas, A.; Chowdhury, S.; **Sureshkumar, D***. *Chem. Commun.* **2022**, *58*, 7793-7796.
34. Visible-Light-Driven Organophotocatalyzed Multi-component Approach for Tandem C(sp³)-H Activation and Alkylation Followed by Trifluoromethylthiolation Mondal, Ghosh, K. G.; Ghosh, K. G.; Das, D.; Garai, G.; Chandu, P.; **Sureshkumar, D***. *J. Org. Chem.* **2022**, *87*, 8611-8622.
33. Visible-Light Photoredox Catalyzed Decarboxylative Alkylation of Vinylcyclopropanes Chandu, P.; Das, D.; Ghosh, K. G.; **Sureshkumar, D***. *Adv. Synth. Catal.* **2022**, *364*, 2340-2345. Accepted as a "**VIP Article**"

2021

32. TEMPO-Mediated Regioselective Synthesis of Isoxazolines, 5-Hydroxy-2-isoxazolines and Isoxazoles *via* Aliphatic δ-C(sp³)-H Bond Oxidation of Oxime. Mondal, S.; Biswas, S.; Ghosh, K. G.; **Sureshkumar, D***. *Chem. Asian J.* **2021**, *16*, 2439-2446. **Invited Article for the Special Issue on "15th Anniversary of IISER Inception"**.
31. Regioselective Visible-Light Driven Organo-photocatalyzed Multicomponent Reaction for C(sp³)-H Alkylation of Phosphoramides with in situ Generated Michael Acceptors. Ghosh, K. G.; Das, D.; Chandu, P.; **Sureshkumar, D***. *Eur. J. Org. Chem.* **2021**, 4293-4298.
30. Regioselective Tetrathiomolybdate and Tetraselenotungstate as Sulfur/Selenium Transfer Reagents: Applications in the Synthesis of New Thio/Seleno Sugars. Kirubakaran, S.; **Sureshkumar, D.***; Chandrasekaran, S. *Chem. Rec.* **2021**, *21*, 3076-3086. **Invited review article.**
29. Visible-Light-Driven Organophotocatalyzed *mono*-, *di*- and *tri*-C(sp³)-H Alkylation of Phosphoramides. Ghosh, K. G.; Das, D.; Chandu, P.; **Sureshkumar, D***. *J. Org. Chem.* **2021**, *86*, 2644-2657.

2020

28. Ammonium Chloride-Mediated Trifluoromethylthiolation of *p*-Quinone Methides. Das, D.; Ghosh, K. G.; Chandu, P.; **Sureshkumar, D***. *J. Org. Chem.* **2020**, *85*, 14201-14209.

2019

27. Photoredox catalyzed allylic trifluoromethylation *via* ring opening of vinyl cyclopropanes using Langlois reagent. Ghosh, K. G.; Chandu, P.; Das, D.; **Sureshkumar, D***. *Tetrahedron* **2019**, *72*, 130641-130651.
26. Metal-free visible light promoted trifluoromethylation of vinylcyclopropanes using pyrylium salt as a photoredox catalyst. Chandu, P.; Ghosh, K. G.; **Sureshkumar, D***. *J. Org. Chem.* **2019**, *84*, 8771-8781.
25. Visible-light mediated trifluoromethylation of *p*-quinone methide by 1,6-conjugate addition using pyrylium salt as organic photocatalyst. Ghosh, K. G.; Chandu, P.; Mondal, S.; **Sureshkumar, D***. *Tetrahedron* **2019**, *75*, 4471-4478.

2015

24. Tandem Aziridine Ring-Opening-Disulfide Formation-Reduction-Michael Addition in One-pot Mediated by Tetrathiomolybdate. **Sureshkumar, D.**; Gunasundari, T.; Chandrasekaran, S. *Tetrahedron* **2015**, *71*, 7267-7281. **Invited article. Special Issue of Tetrahedron: Memorial for Professor Katritzky.**

2014

23. Direct Catalytic Addition of Alkylnitrides to Aldehydes by Transition Metal/NHC Complexes. **Sureshkumar, D.**; Ganesh, V.; Kumagai, N.; Shibasaki, M. *Chem. Eur. J.* **2014**, *10*, 15723-15726. *Appeared on the cover page. Selected as a "Hot Paper"*.

2013

22. A Modified Preparation Procedure for Carbon Nanotube-Confined Nd/Na Heterobimetallic Catalyst for *anti*-Selective Catalytic Asymmetric Nitroaldol Reactions. **Sureshkumar, D.**; Hashimoto, K.; Kumagai, N.; Shibasaki, M. *J. Org. Chem.* **2013**, *78*, 11494-11500.

2012

21. Tetraethylammonium Tetrasetenotungstate: A Versatile Selenium Transfer Reagent in Organic Synthesis. **Sureshkumar, D.**; Gopinath, P.; Chandrasekaran, S. *CHIMIA International Journal for Chemistry* **2012**, *66*, 921-929. *Invited Review*.
20. Bromonium Catalyzed Tandem Ring-Opening/Cyclization of Vinylcyclopropanes and Vinylcyclobutanes: Metal-free [3+2+1]/ [4+2+1] Cascade for the Synthesis of Chiral Amidines and Computational Investigation. Ganesh, V.;[†] **Sureshkumar, D.**;[†] Chandrasekaran, S. *Chem. Eur. J.* **2012**, *18*, 12498-12511. ([†] equal contribution)
19. Direct Catalytic Enantio- and Diastereoselective *anti*-Aldol Reaction of Thiolactams. **Sureshkumar, D.**; Kawato, Y.; Iwata, M.; Kumagai, N.; Shibasaki, M. *Org. Lett.* **2012**, *14*, 3108-3111. **Highlights: Synfacts** **2012**, *8*, 982.

2011

18. Mechanistic Studies on a Cu-Catalyzed Aerobic Oxidative Coupling Reaction with Amines: Structure of Intermediates and the Role of Methanol as a Solvent. Böß, E.; **Sureshkumar, D.**; Sud, A.; Wirtz, C.; Farès, C.; Klussmann, M. *J. Am. Chem. Soc.* **2011**, *133*, 8106-8109.
17. Tandem Ring Opening Cyclization of Vinylcyclopropanes: A Facile Synthesis of Chiral Bicyclic Amidines. Ganesh, V.;[†] **Sureshkumar, D.**;[†] Chandrasekaran, S. *Angew. Chem. Int. Ed.* **2011**, *50*, 5878-5881. ([†] equal contribution)
16. Direct Catalytic Enantio- and Diastereoselective Aldol Reaction of Thioamides. Iwata, M.; Yazaki, R.; Chen, I-H.; **Sureshkumar, D.**; Kumagai, N.; Shibasaki, M. *J. Am. Chem. Soc.* **2011**, 5554-5556. **Highlights: Synfacts** **2011**, *6*, 649.
15. Catalytic Oxidative Coupling Reactions for the Formation of C–C Bonds *via* Non-organometallic Mechanisms. Klussmann, M.; **Sureshkumar, D.** *Synthesis* **2011**, 353-369. *Invited Review*.

2010

14. Tetrathiomolybdate Mediated Rearrangement of Aziridinemethanol Tosylates: A New Thiaza-Payne Rearrangement. **Sureshkumar, D.**; Koutha, S.; Chandrasekaran, S. *J. Org. Chem.* **2010**, *75*, 5533-5541.
13. Autoxidative Carbon-Carbon Bond Formation from Carbon-Hydrogen Bonds. Pinter, A.; Sud, A.; **Sureshkumar, D.**; Klussmann, M. *Angew. Chem. Int. Ed.* **2010**, *49*, 5004-5007.

2009

12. Direct Synthesis of Unsymmetrical Disulfides by Tetrathiomolybdate Mediated Aziridine Ring-Opening Reactions. **Sureshkumar, D.**; Ganesh, V.; Vidyarini, R. S.; Chandrasekaran, S. *J. Org. Chem.* **2009**, *74*, 7958–7961.
11. "Thieme Chemistry Journal Awardees - Where Are They Now? Aerobic Oxidative Coupling of Tertiary Amines with Silyl Enolates and Ketene Acetals". **Sureshkumar, D.**; Sud, A.; M. Klussmann. *Synlett.* **2009**, 1558-1561.
10. Oxidative Coupling of Amines and Ketones by Combined Vanadium and Organocatalysis. Sud, A.;[†] **Sureshkumar, D.**;[†] M. Klussmann. *Chem. Commun.* **2009**, 3169-3171. **Appeared on the back cover page.** ([†] equal contribution)

2007

9. A New Seleno-Aza-Payne type Rearrangement of Aziridinemethanol Tosylates Mediated by Tetraselenotungstate. **Sureshkumar, D.**; Koutha, S.; Chandrasekaran, S. *Eur. J. Org. Chem.* **2007**, 4543-4551.
8. Conformationally Locked Bridged Bicyclic Diselenides: Synthesis, Structure, Se··O Interaction, and Theoretical Studies. **Sureshkumar, D.**; Ganesh, V.; Chandrasekaran, S. *J. Org. Chem.* **2007**, *72*, 5313-5319.
7. Regio and Stereospecific Synthesis of β -Sulfonamidodisulfides and β -Sulfonamidodisulfides from Aziridines using Tetrathiomolybdate as a Sulfur Transfer Reagent. **Sureshkumar, D.**; Gunasundari, T.; Ganesh, V.; Chandrasekaran, S. *J. Org. Chem.* **2007**, *72*, 2106-2117.
6. Tetraselenotungstate: An Efficient Selenating Reagent for the Synthesis of β -Amino diselenides by Aziridine Ring Opening Reactions. **Sureshkumar, D.**; Gunasundari, T.; Saravanan, V.; Chandrasekaran, S. *Tetrahedron Lett.* **2007**, *48*, 623-626.

2006

5. Regio- and Stereoselective Synthesis of Aziridino Epoxides from Cyclic Dienes. **Sureshkumar, D.**; Maity, S.; Chandrasekaran, S. *J. Org. Chem.* **2006**, *71*, 1653-1657.
4. Synthesis of Enantiopure *bis*-Aziridines, *bis*-Epoxides, and Aziridino-epoxides from D-Mannitol. **Sureshkumar, D.**; Maity, S.; Chandrasekaran, S. *Tetrahedron* **2006**, *62*, 10162-10170.

2002-2005

3. Chemistry of Tetrathiomolybdate: Aziridine Ring Opening Reactions and Facile Synthesis of Interesting Sulfur Heterocycles. **Sureshkumar, D.**; Koutha, S.; Chandrasekaran, S. *J. Am. Chem. Soc.* **2005**, *127*, 12760-12761.
2. Michael Addition of Masked Thiolates to Conjugated Systems in Aqueous Media Promoted by Ammonium Tetrathiomolybdate. Devan, N.; **Sureshkumar, D.**; Beadham, I.; Prabhu, K. R.; Chandrasekaran, S. *Indian Journal of Chemistry, Section B: Organic Chemistry Including Medicinal Chemistry* **2002**, *41B*, 2112-2115.

PATENTS

1. Procedure for the Production of Aromatic Compounds Under Formation of Carbon-Carbon Compounds or a Carbon Oxygen Bond in the Context of a Coupling Reaction. Klussmann, M.; Pinter, A.; Sud, A.; **Sureshkumar, D.** *Ger. Offen.* **2011**, DE **102010010706 A1** 2011.09.08.

PRESENTATIONS

25. Organophotoredox catalysis: Switchable radical generation from alkyl sodium sulfinates for sulfonylation and alkylative activation of C–C bond of cyclopropenes. *Sustainability and Interdisciplinary*, Diamond Jubilee Celebration of the Indian Photobiology Society (IPS), 15th July **2023** at IISER Kolkata, West Bengal, India.
24. Metal-assisted, organo, and photo-redox catalysis. One Day National Seminar on “*Dimensions in Chemical Sciences*”, 16th May **2023** at Rishi Bankim Chandra College for Women, Naihati, West Bengal, India.
23. “SO₂” Should It Stay or Go: Switchable C- vs. S-Centered Radicals Generation from Alkyl Sulfinates by Organophotocatalysis. “**Light as Reagent and Product**”: Saturday Seminar Series (SSS)-Spring 2023. 29th April **2023**, Virtual Mode.
22. Visible-light Photocatalysis in Organic Synthesis, Refresher Course in Chemistry. 14th June **2022**, Pondicherry University, Pondicherry, India. Virtual Mode.
21. Applications of Visible-light Photocatalysis in Organic Synthesis, Refresher Course in Chemistry. 19th February **2021**, University of Hyderabad, Hyderabad, India. Virtual Mode.
20. Photocatalytic C–C Bond Formation, 9th November **2020**, Progress in Physical Chemistry: Since & Then, National Institute of Technology Manipur, India.
19. Photocatalytic Hydrogen Atom Transfer Reactions, 30th July **2020**, Virtual Conference on Modern Trends in Organic Chemistry (MTOC-2020), School of Chemistry, Bharathidasan University, Tiruchirappalli, Tamil Nadu, India.
18. Photocatalytic Multiple C(*sp*³)–H Bond Activation, 08-09th July **2020**, International Virtual Conference on Advances in Organic, Medicinal and Biological Chemistry (**RAOMBC-2020**), Vellore Institute of Technology, Chennai, Tamil Nadu, India.
17. Visible light Mediated Organo-Photocatalyzed Direct *mono*-, *di*- and *tri*-C(*sp*³)–H Bond Activation of Phosphoramides and Thiophosphoramides, 12-13th February **2020**, 3rd National Conference in Chemistry (**NCONC20**), Indian Institute of Technology, Gandhinagar, Gujarat, India.
16. Hydrogen Atom Transfer (HAT): A Versatile Strategy for C(*sp*³)–H Activation in Photocatalyzed Organic Synthesis, 6-10th February **2020**, Recent Developments and Challenges in Inorganic and Organic Chemistry Conference, National Institute of Technology Manipur, India.
15. Pedagogical Lectures on Basic Concepts of NMR Spectroscopy and Problem-Solving and Hands-on Session, 22nd July-4th August **2019**, DST-SERB School on Chemical Ecology (DSCE-2019), National Centre for Biological Sciences, Bangalore, India.
14. What is Next? Outreach Program on Carrier Guidance, 28th December **2018**, Government Thirumagal Mills College, Gudiyattam, Vellore Dist, Tamil Nadu, India.
13. Basic Concepts of NMR Spectroscopy and Problem Solving, DST-SERB School on Chemical Ecology (**DSCE-2018**), 8-22nd July **2018**, Indian Institute of Science, Bangalore, India.
12. Trifluoromethylation of Vinyl Cyclopropanes by Photoredox Catalysis, Ramanujan Conclave-**2018**, 25-26th March 2018, NCL Pune, India.
11. Inter IISER and NISER Chemistry Meet (**IINCM-2017**), 22-24th December **2017**, NISER Bhubaneswar, India.
10. Principles of NMR Spectroscopy and Problem-Solving DST-SERB School on Chemical Ecology (**DSCE-2017**), 3-16th July **2017**, National Centre for Biological Sciences, Bangalore, India.

9. National Seminar on Emerging Trends in Chemistry on 18-20th February **2015**, School of Chemistry, Madurai Kamaraj University, India.
8. Invited Speaker, August **2014**, Indian Institute of Science Education and Research Kolkata, Mohanpur, West Bengal, India.
7. 132nd Annual Meeting of the Pharmaceutical Society of Japan on 28-30th March **2012**, Hokkaido University, Sapporo, Japan.
6. Invited Speaker, September **2010**, Indian Institute of Technology, Chennai, India.
5. Invited Speaker, September **2010**, Indian Institute of Technology, Kanpur, India.
4. Invited Speaker, September **2010**, Indian Institute of Technology, Mumbai, India.
3. 36th National Seminar on Crystallography on 22nd January **2007**, Department of Crystallography and Biophysics, University of Madras, Chennai.
2. Chemical Sciences Divisions Day, 14th February **2004**, Indian Institute of Science, Bangalore, India.
1. Pfizer Endowment Symposium, 19th December **2002**, Indian Institute of Science, Bangalore, India.

RESEARCH INTERESTS

- Fluorination
- Visible Light Photoredox Catalysis
- C–H Bond Activation
- Asymmetric Metal and Organocatalysis
- Asymmetric Halofunctionalization of Olefins
- Development of New Methodologies and Total Synthesis of Natural and Non-natural Products

PROFESSIONAL ACTIVITIES

- Member of Humboldt Club Calcutta.
- Member of Pharmaceutical Society of Japan **2011-2013**.
- Life member of the Chemical Research Society of India (CRSI).