Curriculum Vitae

Dr. M. SAKAR *M.Sc., M.Tech., PhD*
Assistant Professor
Director - GreenChem Nano Pvt. Ltd. (*Startup under JAIN*)
Centre for Nano and Material Sciences, Jain (Deemed-to-be) UniversityBangalore 562112, Karnataka, India
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Academic Position

- **Assistant Professor (2017 - Present)**
  Centre for Nano and Material Sciences, Jain (Deemed-to-be) University, Bangalore 562112, Karnataka, India.

Postdoctoral Experiences

- **Postdoctoral Research Fellow (2016 - 17)**
  Dept of Chemical Engineering, Laval University, Quebec G1V0A6, Canada.

- **NCNSNT Postdoctoral Research Fellow (2015 - 16)**
  National Centre for Nanoscience and Nanotechnology, University of Madras, Guindy Campus, Chennai 600025, Tamil Nadu, India.

Education

- **Ph.D. in Nanoscience and Nanotechnology (2011 - 15)**
  - **Institution:** National Centre for Nanoscience and Nanotechnology, University of Madras, Guindy Campus, Chennai 600025, Tamil Nadu, India.
  - **Thesis:** Investigation on the Fabrication of Rare Earth-Substituted and Silver Plasmon-Sensitized Nanostructured Particulates and Fibers of Bismuth Ferrite ($BiFeO_3$) and their Sunlight-Driven Photocatalytic Activities

- **M.Sc., M.Tech. in Nanoscience and Nanotechnology (2007 - 10)**

- **Institution:** National Centre for Nanoscience and Nanotechnology, University of Madras, Guindy Campus, Chennai 600025, Tamil Nadu, India.
- **M. Tech. Thesis:** Preparation and Characterization of Porous Alumina - A Template for Nanostructures; **M. Sc. Thesis:** Pulsed Laser Deposition of ZnO Thin Films at Room Temperature and Study of its Optical Properties
- First Class with distinction

- **B.Sc. in Physics (2004 - 07)**
  - **Institution:** Department of Physics, G.T.N. Arts College, Dindigul 624003, India. Affiliated to Madurai Kamaraj University, Madurai, Tamil Nadu, India.
  - First Class with distinction

Research Projects (Ongoing: 5)

1. **Title of the project : Design and development of photocatalytic metal oxynitride nanostructures for energy and environmental applications**

   Funding agency : Department of Science and Technology (DST) Period : 2017-22 (5 years)
   Cost : Rs. 35,00,000 (~ 46933 USD)
   Role : Principal Investigator
   Project type : DST Inspire faculty grants
   Status : On going

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2. **Title of the project : Design and development of photocatalytic membranes for simultaneous water disinfection and filtration** Funding agency : Department of Science and Technology (DST) Period: 2019-21 (2 years)
   Cost : Rs. 52,95,692 (~71012 USD)
   Role : Principal Investigator
   Project type : Industrial collaboration - Water management Status : On going

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3. **Title of the project : Nano/membrane technology-enabled atmospheric water**

generator integrated with concentrated solar PV modules

Funding agency : Department of Science and Technology (DST) Period : 2021-24 (3 years)
Cost : Rs. 3,78,15,112 (~513394 USD)
Role : Principal Investigator
Project type : Special call on technology development Status : On going

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4. **Title of the project : Design and development of CsAX3 (A=Pb/Sn; X=Cl, Br, I) perovskite nanocrystals as the emerging class of materials for multiplex biosensing**

Funding agency : Science & Engineering Research Board (SERB) Period : 2019-22 (3 years)
Cost : Rs. 30,83,695 (~41350 USD)
Role : Co-Principal Investigator
Project type : Core Research Grant
Status : On going

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5. **Title of the project : Development of dairy waste scum derived fatty acid methyl ester as a potential biofuel for industrial applications**

Funding agency : Department of Science and Technology (DST) Period : 2021-24 (3 years)

Cost : Rs. 58,36,246 (~78261 USD)

Role : Co-Principal Investigator

Project type : Special call on technology development Status : On going

Awards/Honors/Recognitions

- **India's top 10000 scientist (2022):** Recognized by AD (Alper-Doger) Scientific Index 2022 Version 1 as one of India's top 10000 scientists, which is a ranking and analysis system based on the scientific performance and the added value of the scientific output; https://www.adscientificindex.com/scientist.php?id=516687.
- **Matsumae International Foundation Fellow (2022):** Received the award of 'Matsumae International Foundation Fellow', Japan as a visiting scientist to visit the Tokyo Institute of Technology, Japan for a short-term research during August 2022 to November 2022.
- **Young Scientist Award (2021):** Received the award of "Dr. APJ Abdul Kalam Best Young Scientist Award 2020-21" by Bose Science Society, Tamil Nadu Scientific Research Organisation, Tamil Nadu, India in recognition of the contribution in the field of Nanoscience and Nanotechnology.
- **Top 2% scientist in the world (2021):** Recognized by Elsevier and Stanford University as one among the top scientists in percentile rank of 2% in **August 2021 data-update for**

"Updated science-wide author databases of standardized citation indicators" [Mendeley Data, V3, doi: 10.17632/btchxktzyw.3] https://elsevier.digitalcommonsdata.com/datasets/btchxktzyw/3; Table_1_Authors_singleyr_2020_wopp_extracted_202108.xlsx.

- **Catalysts Guest Editor Award (2021):** Recognized with *Catalysts 2021 Guest Editor Award* for guest-editing a special issue entitled "Emerging Trends in TiO_2 Photocatalysis and Applications" for the journal Catalysts (MDPI, Switzerland) https://www.mdpi.com/journal/catalysts/awards/1042.
- **Outstanding Reviewer (2020):** Recognized by the Editors as an Outstanding Reviewer for ***ChemComm*** in 2020, Royal Society of Chemistry (Chem. Commun.,**2021**, *57*, 5735-5736; One of 500 peer reviewers recognized among over 51,000 peer reviewers from 120 countries).
- **BRICS Young Scientist (2019):** Selected by the Department of Science & Technology, Govt. of India (one of 20 participants among 450+ applicants across India) to participate as a Young Scientist in the 4th BRICS Young Scientist Conclave, held at Rio de Janeiro, Brazil during 6-8th November 2019.
- **Lindau Fellow (2019):** Selected by the Department of Science & Technology, Govt. of India to participate (as one of 580 young scientists from across the world) in the 69th Lindau Nobel Laureate Meetings held at Lindau, Germany during 30th June to 5th July 2019.
- **DST-INSPIRE Faculty Award (2017-22):** A five-year tenure track position awarded with research grants by the Department of Science & Technology, Govt. of India to start the independent research career.
- **CSIR-Senior Research Fellow (2011-14):** Awarded with senior

research fellowship under a CSIR-sponsored major research project during PhD at University of Madras, India.

Professional Activities

- **Associate Editor:** ***BMC Research Notes*** (BioMed Central, Springer Nature)
- **Executive Guest Editor:** ***Journal of Photocatalysis*** (Bentham Science, Thematic issue on "Emerging materials and designs for photocatalysis")
- **Editorial Board Topic Editor:** ***Materials***, Catalytic materials section, MDPI, 2021.
- **Guest Editor:** ***Catalysts***, MDPI, Special Issue on "Emerging Trends in TiO_2 Photocatalysis and Applications", 2020.
- **Guest Editor:** ***SN Applied Sciences***, Springer Nature, Topical Collection on "Frontiers in Materials from Basic Science to Real-time Applications", 2019.
- **Guest Editor:** ***Materials Today: Proceedings*** (Elsevier) Conference proceedings of the International Conference on Green Methods for Separation, Purification and Nanomaterial Synthesis, 24-25th April 2018; Jain University, India.
- **Editorial Board Member: Scientific Reports** (Nature); **SN Applied Sciences** (Springer Nature); **Advances in Materials Science and Engineering** (Hindawi); **Journal of Photocatalysis** (Bentham Science); **Journal of Environmental Materials and Sustainable Energy** (Bentham Science); **Frontiers in Nanotechnology** (Frontiers)
- **Peer Reviewer:**
  - **Nature:** *Scientific Reports*
  - **ACS:** *The J. Physical Chemistry C, Industrial & Engineering*

Chemistry Research, ACS Applied Nano Materials

- **RSC:** *Chemical Communications, J. Materials Chemistry C, RSC Advances, Green Chemistry, Royal Society Open Science, Nanoscale, Chemical Science, New Journal of Chemistry, Catalysis Science & Technology, CrystEngComm, J. Mater. Chem. A, J. Mater. Chem. C*
- **Elsevier:** *Materials Research Bulletin, Materials Letters, Int. J. Hydrogen Energy, J. of Colloid and Interface Science, EnergyChem, Chemosphere, Materials Science in Semiconductor Processing, Biocatalysis and Agricultural Biotechnology, Materials Today Communications, Applied Surface Science, Arabian J. of Chemistry, Materials Today: Proceedings, J. Physics and Chemistry of Solids, Int. J. of Biological Macromolecules*
- **Wiley:** *ChemCatChem, ChemistrySelect, ChemSusChem, Asian J. of Organic Chemistry, Batteries & Supercaps*
- **Springer:** *Chemical Papers, SN Applied Sciences, Biotechnology Letters, SN Comprehensive Clinical Medicine, J. of Material Science: Materials in Electronics, J. of Nanostructure in Chemistry, J. Materials Research, Water, Air, & Soil Pollution*
- **IOPscience:** *Nanotechnology, J. of Physics: Condensed Matter, J. of Physics D: Applied Physics, Materials Research Express, Nano Express*
- **MDPI:** *Catalysts, Materials, Applied Sciences, Energies, Water, Molecules, Coatings Nanomaterials, Lubricants, Crystals, Polymers, Sustainability, Life, Pharmaceutics*
- **Taylor & Francis Online:** *Petroleum Science and Technology*
- **Lindau Nobel Laureate Meetings**: *Next Gen Science sessions*
- **Other:** *Beilstein J. of Nanotechnology, Zeitschrift für Physikalische Chemie,* ***Elsevier***
  book proposals, book chapters

Fellowships/Memberships

- Fellow - Bose Science Society, Tamil Nadu Scientific Research Organization
- Fellow - Scholars Academic and Scientific Society
- Member - Asia Society of Researchers
- Member - American Chemical Society
- Member - Royal Society of Chemistry

Other Experiences

- Post Graduate Diploma in Computer Applications, C language and Core Java
- Worked as a part-time tutor for a computer training centre to teach the fundamentals of Computers, Internet, MS-Office, C language and Core Java

Research Group

- Dr. K. V. Yathish (Postdoc, Biodiesel)
- Dr. C. Pownraj (Postdoc, Atmospheric water harvesting)
- R. Mithun Prakash (PhD scholar, Photocatalytic oxynitrides)
- C. Ningaraju (PhD scholar, Biodiesel)
- K. Gayathri (PhD scholar, Photocatalytic MOF membranes)
- Y. N. Teja (PhD scholar, Photocatalytic 2D materials)
- M. Kanmani (PhD scholar, Supercapacitors)

M.Sc. Research Project Dissertation Guided:

- P. Deekshith (Biodiesel; 2021-23 [on-going])
- P. P. Adarsh Chandran (Bio-composites; 2020-22 [on-going])

- S. Bharathkumar (Bio-composites; 2019-21)

Intern students:

- V. Shweta (Bio-composite materials; Oct-Dec 2021)

Research Interests

- Photocatalysis/Photochemistry
- Biodiesel production/Bio-waste conversions
- Membrane technology for water purification
- Atmospheric water harvesting
- Environmental- and bio-sensors
- Supercapacitors and energy storage materials
- Bio-composite materials/Hyperthermia applications
- Chemical and physical processes for surface modifications
- Plasmonics/Surface Enhanced Raman Spectroscopy (SERS)
- Multiferroic/Multifunctional nanomaterials/Magnetic materials
- Metal/Metal oxides/Graphene/MOFs/MXenes/Chalcogenides
- Hybrid/Anisotropic nanostructures
- Organic-inorganic/All-inorganic perovskite nanostructures
- Nitridation, Electrospinning, Sol-gel, Auto-combustion, Chemical reduction, Spincoating, Anodization, Precipitation, Hydrothermal

International & National Collaborators

- Prof. Trong-On Do, Laval University, Canada
- Prof. Luyi Sun, University of Connecticut, USA
- Prof. Seeram Ramakrishna, National University of Singapore, Singapore
- Prof. Suresh Valiyaveettil, National University of Singapore, Singapore
- Prof. V. V. Srinivasu, University of South Africa, South Africa

- Dr. Umakanta Jena, New Mexico State University, USA
- Dr. Wee-Jun Ong, Xiamen University, Malaysia
- Dr. Juhana Jaafar, Universiti Teknologi Malaysia, Malaysia
- Dr. Lau Woei Jye, Universiti Teknologi Malaysia, Malaysia
- Dr. Chaudhery Mustansar Hussain, New Jersey Institute of Technology, USA
- Prof. Tamer Zaki Sharara, Egyptian Petroleum Research Institute, Egypt
- Dr. Chinh Chien Nguyen, Duy Tan University, Vietnam
- Prof. M. V. Shankar, Yogi Vemana University, India
- Dr. K. N. Yogalakshmi, Central University of Punjab, India
- Dr. A. Murali, CSIR-Central Institute of Plastics Engineering & Technology, India

Publication Metrics

- Papers in journals **82**
- National/International Patents **02**
- Edited Books **02**
- Invited book chapters **16**
- Other general articles **03**
- Papers in conferences **89**

- Best paper awards in conferences **14**

List of Publications in Peer Reviewed International/National Journals

1. K. V. Yatish, H. H. R. Harsha, **M. Sakar**, R. Geetha Balakrishna, A comprehensive review on dairy waste-scum as a potential feedstock for biodiesel production, ***Process Saf. Environ. Prot.***, **2022**, 160, 921-947.

2. A. Swetha, P. Srikanth, B. Satheesh kumar, **M. Sakar**, Md S. Hossain, S. Bharathkumar, P. Baskaran, A. Alsalme, M. Murugesan, Antimicrobial and toxicity studies of Dodonaea aungustifolia extracts-mediated green synthesized copper oxide particles, ***ChemistrySelect***, **2022,** 7, e202104017, DOI: 10.1002/slct.202104017.

3. K. Gayathri, Y. N. Teja, R. Mithun Prakash, Md Shahadat Hossain, Ali Alsalme, E. Sundaravadivel, **M. Sakar**, In-situ grown ZnO particles on g-C_3N_4 layers: A direct Z-scheme driven photocatalyst for the degradation of dye and pharmaceutical pollutants under solar irradiation, ***J. Mater. Sci.: Mater. Electron.***, **2022**. **(DOI: 10.1007/s10854-022-07825-6)**

4. R. Mithun Prakash, C. Ningaraju, K. Gayathri, Y. N. Teja, M. A. Manthrammel, M. Shkir, S. AlFaify, **M. Sakar**, One-step solution auto-combustion process for the rapid synthesis of crystalline phase iron oxide nanoparticles with improved magnetic and photocatalytic properties, ***Adv. Powder Technol.***, **2022,** 33, 103435.

5. A. Murali, **M. Sakar**, S. Priya, V. Vijayavarman, P. Sadanand, R. Sai, Y. Katayama,
M. A. Kader, K. Ramanujam, Insights into the emerging alternative polymer-based electrolytes for all solid-state lithium-ion batteries: A review, ***Mater. Lett.***, **2022**, 313, 131764.

6. M. Maryam, D. T. Nguyen, **M. Sakar**, M. Pedeferri, M. Asa, R. Kaveh, M. V. Diamanti, Trong-On Do, Smart protection of surfaces during day-night by a novel composite self-cleaning

coating with catalytic memory, ***J. Environ. Chem. Eng.***, **2022**, 10, 106891.

7. K. Vinothkumar, M. S. Jyothi, C. Lavanya, **M. Sakar**, Suresh Valiyaveettil, R. Geetha Balakrishna, Strongly co-ordinated MOF-PSF matrix for selective adsorption, separation and photodegradation of dyes, ***Chem. Eng. J.***, **2022**, 428,132561.

8. A. Murali, A. V. Saravanan, **M. Sakar**, R. Ramesh, M. Devendiran, N. S. Vanitha, A review on green polymer binder-based electrodes and electrolytes for all solid- state Li-ion batteries, ***Adv. Mater. Lett.***, **2021**, 12, 1-9.

9. M. Gayathri, **M. Sakar**, E. Satheeshkumar, E. Sundaravadivel, Insights into the mechanism of ZnO/g-C_3N_4 nanocomposites towards photocatalytic degradation of multiple organic dyes, ***J. Mater. Sci.: Mater. Electron.***, **2021**. **(DOI: 10.1007/s10854- 021-07302-6)**

10. K. Rokesh, **M. Sakar**, Trong-On Do, Integration of aminosilicate functionalized- fullerene (C_{60}) QDs on bismuth vanadate ($BiVO_4$) nanolayers for the photocatalytic degradation of pharmaceutical pollutants, ***Catal. Today***, **2021**. **(DOI: 10.1016/j.cattod.2021.10.006)**

11. C. Ningaraju, K. V. Yatish, R. Mithun Prakash, **M. Sakar**, R. Geetha Balakrishna, Gasoline pre-treated feedstock for the production of biodiesel with improved physicochemical properties, ***Biomass Convers. Biorefin.***, **2021**. **(DOI: 10.1007/s13399-021-01992-y)**

12. R. Vijayarangan, **M. Sakar**, R. Ilangovan, Stabilization of melon phase during the formation of g-C_3N_4 from melamine and its structure-property relationship towards photocatalytic degradation of dyes under sunlight, ***J. Mater. Sci.: Mater. Electron.***, **2021**. **(DOI: 10.1007/s10854-021-07108-6)**

13. K. Rokesh, **M. Sakar**, Trong-On Do, Amine-functionalized metal organic framework integrated bismuth tungstate (Bi_2WO_6/NH_2-UiO-66) composites for the enhanced solar-driven photocatalytic degradation of ciprofloxacin molecules, ***New J. Chem.***, **2021**, 45, 22650-22660.

14. G. N. Vishnu, B. Jorge, F. P. Edward, **M. Sakar**, B. Francois, Trong-On Do, Porphyrin and single atom featured reticular materials: recent advances and future perspective in solar-driven CO_2 reduction, ***Green Chem.***, **2021**, 23, 8332-8360.

15. S. Bharathkumar, **M. Sakar**, M. Navaneethan, J. Archana, Mechanistic insights into the electrospinning fabrication of belts-like 1D-structure of $BiFeO_3$ and their photocatalytic properties, ***Mater. Lett.***, **2021**, 304, 130475.

16. C. G. Sanjayan, M. S. Jyothi, **M. Sakar**, R. Geetha Balakrishna, Multidentate ligand approach for conjugation of perovskite quantum dots to biomolecules, ***J. Colloid Interface Sci.***, **2021**, 603, 758-770.

17. S. Bharathkumar, **M. Sakar**, J. Archana, M. Navaneethan, S. Balakumar, Interfacial engineering in 3D/2D and 1D/2D bismuth ferrite ($BiFeO_3$)/graphene oxide nanocomposites for the enhanced photocatalytic activities under sunlight, ***Chemosphere***, **2021**, 284, 131280.

18. G. N. Vishnu, D. T. Nguyen, B. Jorge, **M. Sakar**, A. Jason, J. Josué, B. François, Trong-On Do, L. Mindorff, Manifestation of an enhanced photoreduction of CO_2 to CO over the in-situ synthesized rGO-covalent organic framework under visible light irradiation, ***ACS Appl. Energy Mater.***, **2021**, 4, 6005-6014.

19. Y. N. Teja, **M. Sakar**, K. Vinothkumar, R. Geetha Balakrishna, Large scale synthesis of silane functionalized near-superhydrophobic aluminium hydroxide particles via facile surface grafting technique, ***Mater. Today Commun.***, **2021**, 26, 101744.

20. V. N. Rao, P. Ravi, M. Sathish, M. Vijayakumar, **M. Sakar**, M.

Karthik, S. Balakumar, K. R. Reddy, N. P. Shetti, M. V. Shankar, T. M. Aminabhavi, Metal chalcogenide-based core/shell photocatalysts for solar hydrogen production: Recent advances, properties and technology challenges, ***J. Hazard. Mater.***, **2021**, 415, 125588.

21. K. Rokesh, **M. Sakar**, Trong-On Do, Emerging hybrid nanocomposite photocatalysts for the degradation of antibiotics: insights into their designs and mechanisms, ***Nanomaterials***, **2021**, 11, 572.

22. V. N. Rao, P. Ravi, M. Sathish, N. L. Reddy, K. Lee, **M. Sakar**, P. Prathap, M. M. Kumari, K. R. Reddy, M. N. Nadagouda, T. M. Aminabhavi, M. V. Shankar, Monodispersed core/shell nanospheres of ZnS/NiO with enhanced H_2 generation and quantum efficiency at versatile photocatalytic conditions, ***J. Hazard. Mater.***, **2021**, 413, 125359.

23. V. N. Rao, T. J. Malu, K. K. Cheralathan, **M. Sakar**, P. Sudhagar, R. G. Vicente, M.
M. Kumari, M. V. Shankar, Light-driven transformation of biomass into chemicals using photocatalysts -Vistas and challenges, ***J. Environ. Manage.***, **2021**, 284, 111983.

24. M. Maryam, D. T. Nguyen, **M. Sakar**, M. Pedeferri, M. Asa, R. Kaveh, M. V. Diamanti, Trong-On Do, Mechanistic insights into the store-and-discharge photogenerated electrons in hydrogenated glucose template synthesized Pt:TiO_2/WO_3 photocatalyst for the round-the-clock decomposition of methanol, ***Mater. Res. Bull.***, **2021**, 137, 111203.

25. N. M. Soumya, **M. Sakar**, K. Manmohan, R. Geetha Balakrishna, Recent case studies on the use of ozone to combat coronavirus: problems and perspectives, ***Environ. Technol. Innov.***, **2021**, 21, 101313.

26. K. V. Yatish, R. Mithun Prakash, C. Ningaraju, **M. Sakar**, R. Geetha Balakrishna, H.
S. Lalithamba, Terminalia chebula as a novel green source for the

synthesis of copper oxide nanoparticles and as feedstock for biodiesel production and its application on diesel engine, ***Energy***, **2021**, 215(B), 119165.

27. Y. V. Divyasri, N. Lakshmana Reddy, Kiyoung Lee, **M. Sakar**, V. Navakoteswara Rao, V. Venkatramu, M. V. Shankar, N. C. Gangi Reddy, Optimization of N doping in TiO_2 nanotubes for the enhanced solar light mediated photocatalytic H_2 production and dye degradation, ***Environ. Pollut.***, **2021**, 269, 116170.

28. M. Maryam, D. T. Nguyen, M. V. Diamanti, R. Kaveh, M. Asa, **M. Sakar**, M. P. Pedeferri, Trong-On Do, Fabrication of dual-phase TiO_2/WO_3 with post- illumination photocatalytic memory, ***New J. Chem.***, **2020,** 44, 20375-20386.

29. K. V. Yatish, H. Lalithamba, **M. Sakar**, R. Geetha Balakrishna, B. R. Omkaresh, S. B. Arun, Parametric studies on the storage stability and ageing effect of biodiesel treated with eucalyptus oil as a cost-effective green-antioxidant additive, ***Int. J. Energy Res.***, **2020**, 44, 11711-11724.

30. G. Jesna, H. Vishaka, C. Sanjayan, V. Suvina, **M. Sakar**, R. Geetha Balakrishna, Perovskite nanomaterials as optical and electrochemical sensors, ***Inorg. Chem. Front.***, **2020**, 7, 2702-2725.

31. R. Mithun Prakash, Y. N. Teja, C. Ningaraju, **M. Sakar**, Band structuring engineering in titanium oxynitrides for the visible light driven photocatalytic applications, ***AIP Conf. Proc.***, **2020**, 2265, 030160.

32. K. Vinothkumar, V. Suvina, **M. Sakar**, R. Geetha Balakrishna, Fe-based metal organic frameworks for the simultaneous detection of multiple metal ions in aqueous medium by square wave voltammetry method, ***AIP Conf. Proc.***, **2020**, 2265, 030172.

33. R. Shwetharani, H. R. Chandan, **M. Sakar**, R. Geetha Balakrishna, K. R. Reddy, A.
V. Raghu, Photocatalytic semiconductor thin films for hydrogen production and environmental applications, ***Int. J. Hydrogen.***

Energy, **2020**, 45, 18289-18308.

34. K. Rokesh, **M. Sakar**, Trong-On Do, Calcium Bismuthate ($CaBiO_3$): A prospective sunlight driven perovskite photocatalyst for the degradation of emerging pharmaceutical contaminants, ***ChemPhotoChem***, **2020**, 4, 373-380.
35. A. Murali, S. Srinivasan, A. A. Boopathi, **M. Sakar,** C. Suryanarayanan, N. S. Vanitha, R. Joseph Bensingh, M. Abdul Kader, S. N. Jaisankar, Copper (0) mediated single electron transfer-living radical polymerization of methyl methacrylate: functionalized graphene as a convenient tool for radical initiator, ***Polymers***, **2020**, 12, 874.
36. **M. Sakar**, R. Mithun Prakash, Kiran Shinde, Geetha R Balakrishna, Revisiting the materials and mechanism of metal oxynitrides for photocatalysis, ***Int. J. Hydrogen. Energy***, **2020**, 45, 7691-7705.
37. N. Ramesh Reddy, U. Bhargav, M. Mamatha Kumari, K. K. Cheralathan, **M. Sakar**, Review on the interface engineering in the carbonaceous titania for the improved photocatalytic hydrogen production, ***Int. J. Hydrogen. Energy***, **2020**, 45, 7584-7615.
38. **M. Sakar**, R. Mithun Prakash, Trong-On Do, Insights into the TiO_2-based photocatalytic systems and their mechanisms, ***Catalysts,*** **2019**, 9, 680.
39. M. H. Vu, **M. Sakar**, S. A. H. Tabrizi, Trong-On Do, Photo(electro)catalytic nitrogen fixation: Problems and possibilities, ***Adv. Mater. Interfaces***, **2019**, 6, 1970076.
40. C. C. Nguyen, **M. Sakar**, M. H. Vu, Trong-On Do, Nitrogen vacancies-assisted the enhanced plasmonic photoactivities of Au/g-C_3N_4 crumpled nanolayers: A novel pathway toward efficient solar light-driven photocatalysts, ***Ind. Eng. Chem. Res.***, **2019**, 58, 3698-3706.
41. K. Rokesh, **M. Sakar**, Trong-On Do, 2-(aminomethyl

pyridine)SbI_5: An emerging visible-light driven organic-inorganic hybrid perovskite for photoelectrochemical and photocatalytic applications, ***Mater. Lett.***, **2019**, 242, 99-102.

42. R. Shwetharani, **M. Sakar**, C. A. N. Fernando, Vassilios Binas, Geetha R Balakrishna, Recent advances and strategies applied to tailor energy levels, active sites and electron mobility in titania and its doped/composite analogues for hydrogen evolution in sunlight, ***Catal. Sci. Technol.***, **2019**, 9, 12-46.

43. S. Bharathkumar, **M. Sakar**, S. Balakumar, Fabrication of $BiFeO_3$ nanostructures and their visible light photocatalytic degradation and water splitting properties, ***AIP Conf. Proc.***, **2019**, 2115, 030167.

44. M. H. Vu, **M. Sakar**, Trong-On Do, Insights into the recent progress and advanced materials for photocatalytic nitrogen fixation for ammonia (NH_3) production, ***Catalysts***, **2018**, 8, 621.

45. **M. Sakar**, C. C. Nguyen, M. H. Vu, Trong-On Do, Materials and mechanisms of photo-assisted chemical reactions under light and dark: Can day-night photocatalysis be achieved?, ***ChemSusChem***, **2018**, 11, 809-820.

46. H. R. Chandan, **M. Sakar**, M. Ashesh, T. N. Ravishankar, T. Ramakrishnappa, R. T. Sergio, R. Geetha Balakrishna, Observation of oxo-bridged yttrium in TiO_2 nanostructures and their enhanced photocatalytic hydrogen generation under UV/Visible light irradiations, ***Mater. Res. Bull.***, **2018**, 104, 212-219.

47. M. H. Vu, **M. Sakar**, C. C. Nguyen, Trong-On Do, Chemically bonded Ni co- catalyst onto the S doped g-C_3N_4 nanosheets and their synergistic enhancement n H_2 production under sunlight irradiation, ***ACS Sustainable. Chem. Eng.***, **2018**, 6, 4194-4203.

48. R. Shwetharani, **M. Sakar**, H. R. Chandan, Geetha R. Balakrishna, Observation of simultaneous photocatalytic degradation and hydrogen evolution on the lanthanum modified TiO_2 nanostructures, ***Mater. Lett.***, **2018**, 218, 262-265.

49. M. H. Vu, **M. Sakar**, C. C. Nguyen, Trong-On Do, Enhanced hydrogen production by the protonated, sulfur doped and Pt-loaded g-C_3N_4 nanolayers, ***Mater. Lett.***, **2018**, 218, 169-172.

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