

## Gaurangi Gogoi



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present

Assistant Professor, Department of Chemistry, Pub Kamrup College, Baihata Chariali, Kamrup, Assam.

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### Academic Summary

2019

Ph.D. in Chemistry, Indian Institute of Technology, Guwahati  
Thesis Title: "Efficient Heterojunction Strategies in Multinary Sulphide Based Semiconductors for Enhanced Photocatalytic Performance"

**Current address:**

Department of Chemistry  
Pub Kamrup College  
Baihata Chariali  
Assam-781381

2013

Masters in Chemistry (Inorganic Specialization), Gauhati University, Assam.

2011

Bachelor in Science (Chemistry Honors), Cotton College, Gauhati University, Assam. (Distinction)

2007

Higher Secondary School Leaving Certificate, Salt Brook Academy (AHSEC), Dibrugarh, Assam.

2005

High School Leaving Certificate, Sophy Mercy Memorial School (SEBA), Sivasagar, Assam. (Distinction)

Qualified **GATE** in **2013**

Qualified **SLET** in **2013**

## Research Interest

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Design and development of new efficient and stable materials for application in photocatalytic water splitting, dye degradation and photoelectrochemical water splitting. Application of the nanomaterials in different biological sensing applications using electrochemical method.

## Expertise

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1. *Analytical techniques:* Well experienced with the conventional and modern characterization techniques usable in chemistry and material science: Ultraviolet-visible spectroscopy, Photoluminescence, TRPL, FESEM, TEM, BET surface area analysis, XPS, Gas chromatography, FTIR, etc.
2. *Synthetic Skills:* Performing conventional solid-state synthesis, sol-gel synthesis, and solvothermal-hydrothermal synthesis and device fabrications for photocatalysis and photoelectrochemical applications.

## Teaching experience

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- Teaching assistantship for physical course of undergraduate (B.Tech) and postgraduate (M.Sc) students from 2013-2018 at Indian Institute of Technology, Guwahati.
- Guest Faculty at Gauhati University from August 2019 – December 2019

## Publications

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- 1) Design of noble metal free hierarchical VS<sub>2</sub> onto WO<sub>3</sub> nanoflakes as an effective heterojunction strategy for enhanced photoelectrochemical water oxidation. C. T. Moi, **G. Gogoi**, T. K. Sahu, D. Gogoi, N. R. Peela and M. Qureshi, *Sustainable Energy Fuels*, 2019, **3**, 3481.
- 2) A Z-Scheme Strategy Utilizing ZnIn<sub>2</sub>S<sub>4</sub> and Hierarchical VS<sub>2</sub> Microflowers with Improved Charge Carrier Dynamics for Superior Photoelectrochemical Water Oxidation. **G. Gogoi**, C. T. Moi, A. S. Patra, D. Gogoi, N. R. Peela and M. Qureshi, *Chem Asian J.*, 2019, **14**, 4607.

- 3) Combined Experimental and Theoretical Insights into the Synergistic Effect of Cerium Doping and Oxygen Vacancies in BaZrO<sub>3-δ</sub> Hollow Nanospheres for Efficient Photocatalytic Hydrogen Production. A. S. Patra, M. S. Chauhan, S. Keene, **G. Gogoi**, K. A. Reddy, S. Ardo, D. L. V. K. Prasad and M. Qureshi, *J. Phys. Chem. C*, 2019, **123**, 233.
- 4) Ordered-Disordered BaZrO<sub>3-δ</sub> Hollow Nanosphere/Carbon Dot Hybrid Nanocomposite: A New Visible-Light-Driven Efficient Composite Photocatalyst for Hydrogen Production and Dye Degradation. A. S. Patra, **G. Gogoi**, M. Qureshi, *ACS Omega*, 2018, **3**, 10980.
- 5) Effect of surface overlayer in enhancing the photoelectrochemical water oxidation of *in situ* grown one-dimensional spinel zinc ferrite nanorods directly onto the substrate. T. K. Sahu, A. K. Shah, **G. Gogoi**, A. S. Patra, M. S. Ansari and M. Qureshi, *Chem. Commun.*, 2018, **54**, 10483.
- 6) Hybrid of g-C<sub>3</sub>N<sub>4</sub> and MoS<sub>2</sub> Integrated onto Cd<sub>0.5</sub>Zn<sub>0.5</sub>S: Rational Design with Efficient Charge Transfer for Enhanced Photocatalytic Activity. **G. Gogoi**, S. Keene, A. S. Patra, T. K. Sahu, S. Ardo and M. Qureshi, *ACS Sustainable Chem. Eng.*, 2018, **6**, 6718.
- 7) Modulating the electronic structure of lanthanum manganite by ruthenium doping for enhanced photocatalytic water oxidation. A. S. Patra, **G. Gogoi**, R. K. Sahu and M. Qureshi, *Phys. Chem. Chem. Phys.*, 2017, **19**, 12167.
- 8) Noble metal-free counter electrodes utilizing Cu<sub>2</sub>ZnSnS<sub>4</sub> loaded with MoS<sub>2</sub> for efficient solar cells based on ZnO nanowires co-sensitized with CuInS<sub>2</sub>-CdSe quantum dots. D. Barpuzary, A. Banik, **G. Gogoi** and M. Qureshi, *J. Mater. Chem. A*, 2015, **3**, 14378.
- 9) Quaternary semiconductor Cu<sub>2</sub>ZnSnS<sub>4</sub> loaded with MoS<sub>2</sub> as a co-catalyst for enhanced photo-catalytic activity. **G. Gogoi**, S. Arora, N. Vinothkumar, M. De and M. Qureshi, *RSC Adv.*, 2015, **5**, 40475.

### Conferences Attended

- 1) 3<sup>rd</sup> International Conference on Advanced Nanomaterials and Nanotechnology (ICANN-2013), 1<sup>st</sup>-3<sup>rd</sup> December, 2013, Indian Institute of Technology Guwahati, Guwahati, India (*Attended*).

- 2) 4<sup>th</sup> International Conference on Advanced Nanomaterials and Nanotechnology (**ICANN-2015**), 8<sup>th</sup>-11<sup>th</sup> December, 2015, Indian Institute of Technology Guwahati, Guwahati, India (*Poster presented*).
- 3) International Conference on Advances in Nanomaterials and Nanotechnology (**ICANN-2016**), 4<sup>th</sup>-5<sup>th</sup> November, 2016, Jamia Millia Islamia, New Delhi, India (*Poster presented*).
- 4) National Conference on Frontiers in Chemical Sciences (**FICS-2016**), 8<sup>th</sup>-10<sup>th</sup> December, 2016, Indian Institute of Technology Guwahati, Guwahati, India (*Poster presented*).
- 5) 20<sup>th</sup> CRSI National Symposium in Chemistry, 3<sup>rd</sup>-5<sup>th</sup> February, 2017, Department of Chemistry, Gauhati University, Guwahati, India (*Poster presented*).
- 6) 3<sup>rd</sup> National Workshop on NEMS/MEMS and Theranostic Devices, 21<sup>st</sup>-23<sup>rd</sup> March, 2017, Centre for Nanotechnology, Indian Institute of Technology Guwahati, Guwahati, India (*Participated*).
- 7) One-Day Workshop on Vacuum Technology and its Application in Optical Science, 19<sup>th</sup> August, 2017, Department of Physics, Indian Institute of Technology Guwahati, Guwahati, India (*Participated*).
- 8) 5<sup>th</sup> International Conference on Advanced Nanomaterials and Nanotechnology (**ICANN-2017**), 18<sup>th</sup>-21<sup>st</sup> December, 2017, Indian Institute of Technology Guwahati, Guwahati, India (*Poster presented*).
- 9) Conference on Advances in Catalysis for Energy and Environment (**CACEE-2018**), 10<sup>th</sup>-12<sup>th</sup> January, 2018, Tata Institute of Fundamental Research (TIFR), Mumbai, India (*Poster presented*).
- 10) Frontiers in Chemical Sciences (**FICS-2018**), 6<sup>th</sup>-8<sup>th</sup> December, 2018, Department of Chemistry, Indian Institute of Technology Guwahati, Guwahati, India (*Poster presented*).