



Official Name : Dr Aola Supong
Qualifications : M.Sc., CSIR-NET, Ph.D
Teaching experience : 2 years
Specialization / area of interest : Analytical Chemistry, Environmental Chemistry, Wastewater management, Density Functional Theory Calculations, Carbon materials.
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PUBLICATIONS IN REFERRED JOURNALS

- Pongener, C., Bhomick, P., Upasana Bora, S., Goswamee, R. L., **Supong, A.**, & Sinha, D. (2017). Sand-supported bio-adsorbent column of activated carbon for removal of coliform bacteria and *Escherichia coli* from water. *International Journal of Environmental Science and Technology*, 14, 1897–1904.
- Bhomick, P. C., **Supong, A.**, Baruah, M., Pongener, C., & Sinha, D. (2018). Pine cone biomass as an efficient precursor for the synthesis of activated biocarbon for adsorption of anionic dye from aqueous solution: Isotherm, kinetic, thermodynamic and regeneration studies. *Sustainable Chemistry and Pharmacy*, 10, 41–49.
- Pongener, C., Bhomick, P. C., **Supong, A.**, Baruah, M., Sinha, U. B., & Sinha, D. (2018). Adsorption of fluoride onto activated carbon synthesized from *Manihot esculenta* biomass—Equilibrium, kinetic and thermodynamic studies. *Journal of Environmental Chemical Engineering*, 6(2), 2382–2389.
- Bhomick, P. C., **Supong, A.**, Karmaker, R., Baruah, M., Pongener, C., & Sinha, D. (2019). Activated carbon synthesized from biomass material using single-step KOH activation for adsorption of fluoride: Experimental and theoretical investigation. *Korean Journal of Chemical Engineering*, 36, 551–562.
- Longkumer, N., Richa, K., Karmaker, R., Kuotsu, V., **Supong, A.**, Jamir, L., Bharali, P., & Sinha, U. B. (2019). Green synthesis of bromo organic molecules and investigations on their antibacterial properties: An experimental and computational approach. *Acta Chimica Slovenica*, 66(2), 276–283.
- **Supong, A.**, Bhomick, P. C., Sinha, U. B., & Sinha, D. (2019). A combined experimental and theoretical investigation of the adsorption of 4-nitrophenol on activated biocarbon using DFT method. *Korean Journal of Chemical Engineering*, 36, 2023–2034.

- **Supong, A.**, Bhomick, P. C., Baruah, M., Pongener, C., Sinha, U. B., & Sinha, D. (2019). Adsorptive removal of bisphenol A by biomass activated carbon and insights into the adsorption mechanism through density functional theory calculations. *Sustainable Chemistry and Pharmacy*, 13, 100159.
- Baruah, M., **Supong, A.**, Bhomick, P. C., Karmaker, R., Pongener, C., & Sinha, D. (2020). Batch sorption–photodegradation of Alizarin Red S using synthesized TiO₂/activated carbon nanocomposite: An experimental study and computer modelling. *Nanotechnology for Environmental Engineering*, 5, 1–13.
- Bhomick, P. C., **Supong, A.**, Baruah, M., Pongener, C., Gogoi, C., & Sinha, D. (2020). Alizarin Red S adsorption onto biomass-based activated carbon: Optimization of adsorption process parameters using Taguchi experimental design. *International Journal of Environmental Science and Technology*, 17(2), 1137–1148.
- **Supong, A.**, Bhomick, P. C., Karmaker, R., Ezung, S. L., Jamir, L., Sinha, U. B., & Sinha, D. (2020). Experimental and theoretical insight into the adsorption of phenol and 2,4-dinitrophenol onto *Tithoniadiversifolia* activated carbon. *Applied Surface Science*, 529, 147046.
- Baruah, M., Ezung, S. L., **Supong, A.**, Sharma, S., & Sinha, D. (2022). Experimental and theoretical insight into the adsorption of 2,4-dichlorophenol on low-cost bamboo sheath activated carbon. *Sustainable Chemistry and Pharmacy*, 26, 100643.
- Richa, K., Temsurenla, **Supong, A.**, Ajungla, T., & Sinha, U. B. (2022). Mechanistic insight into the antibacterial activity of isothiocyanates via cell membrane permeability alteration. *Pharmaceutical Chemistry Journal*, 56(3), 300–308.
- **Supong, A.**, Sinha, U. B., & Sinha, D. (2022). Density functional theory calculations of the effect of oxygenated functionals on activated carbon towards cresol adsorption. *Surfaces*, 5(2), 280–289.
- Bhomick, P. C., **Supong, A.**, Sema, A. I., Sinha, D. (2023). Defluoridation using pinecone-based activated carbon: Adsorption isotherm, kinetics, regeneration, and co-ions effect investigation. *Journal of the Serbian Chemical Society*, 15, 15.
- Bhomick, P. C., **Supong, A.**, Kumar, S., Sema, A. I., Merry, T., & Sinha, D. (2023). Utilization of *Pinuskesiya* and *Schimawallichii* biomass-derived activated carbon for methylene blue removal: Adsorption performance and mechanistic insights. *Water Conservation Science and Engineering*, 8(1), 48.
- Sharma, S., Ezung, S. L., **Supong, A.**, Baruah, M., Kumar, S., Umdor, R. S., & Sinha, D. (2023). Activated carbon adsorbent derived from waste biomass, “*Croton caudatus*” for efficient removal of 2-chlorophenol from aqueous solution: Kinetics, isotherm, thermodynamics and DFT simulation. *Chemical Engineering Research and Design*, 190, 777–792.
- **Supong, A.**, Bhomick, P. C., Karmaker, R., Sinha, D., & Sinha, U. B. (2024). Synthesis and characterization of brominated activated carbon using a green strategy: Combined experimental and theoretical study. *Chemical Physics Letters*, 850, 141477.

- Nakhro, V., Ao, K., Lotha, T. N., Rudithongru, L., Pongener, C., Aier, M., **Supong, A.**, & Jamir, L. (2025). Efficient removal of Congo Red dye using activated carbon derived from fish scales waste: Isotherm, kinetics and thermodynamics studies. *Nature Environment and Pollution Technology*, 24, 339–353.

BOOK/ CHAPTER EDITED

- Bhomick, P. C., **Supong, A.**, & Sinha, D. (2017). Organic pollutants in water and its remediation using biowaste activated carbon as greener adsorbent. *International Journal of Hydrology*.
- **Supong, A.**, Bhomick, P. C., & Sinha, D. (2017). Waterborne pathogens in drinking water—Existing removal techniques and methods. *MOJ Toxicology*.
- Baruah, M., **Supong, A.**, Bhomick, P. C., Pongener, C., Jamir, S., & Sinha, D. (2019). Waste biomass for synthesis of porous activated carbon and its application in waste treatment. In *Climate Change and Sustainable Development: Perspective from North East India* (1st ed.). Purbayon Publication.
- Bhomick, P. C., Sema, A. I., & **Supong, A.** (2022). Polymer-derived ceramic adsorbent for removal of dyes from water. *Springer*.
- Supong, A., Tsurho, S., Nungsangtola, Bhomick, P. C., & Walling, T. (2024). Preferential adsorption of phenolic compounds onto activated carbon: Theoretical investigation using DFT method. *Sao Chang College Journal*.

ORAL/POSTER PRESENTATION

INTERNATIONAL

- Oral presentation on “*Synthesis of Low-Cost Activated Biocarbon for the Effective Removal of 4-Nitrophenol from Aqueous Solution*”, at the International Seminar on Chemistry and Environmental Sustainability, organized by Department of Chemistry, Mizoram University, 19th–22nd February, 2019

NATIONAL

- Invited Speaker in the National Seminar on Chemistry in Achieving SDGs organized by Department of Chemistry, Sri Parasakthi College for women, Courtallam on 25th May 2025.
- Oral presentation on “*A new bio-adsorbent synthesized from Tithoniadiversifolia for the removal of organic pollutant from aqueous solution*”, at the National Seminar on Advances in Biological Sciences Research, organized by Department of Botany, Nagaland University, 28th February – 1st March, 2017.
- Oral presentation on “*Sustainable production of activated carbon from Elephant grass for enhanced removal of phenolic compounds from water*”, at the National Seminar on Climate Change and Sustainable Development with Special Focus

on North-East India, organized by Nagaland University Teachers Association, Nagaland University, 17th–18th May, 2017.

- Poster presentation on *“Tithoniadiversifolia as a potent precursor for preparation of biochar and activated carbon”*, at Research Conclave, organized by IIT Guwahati, 8th–11th March, 2018.
- Oral presentation on *“Taguchi’s design of experiment for sustainable production of low-cost adsorbent from Tithoniadiversifolia biomass”*, at the National Seminar on Bio-resource Exploration and Utilization: Application in Modern Biology, organized by BIF, Nagaland University, 9th–10th October, 2018.
- Oral presentation on *“Efficient removal of Bisphenol A by Tithoniadiversifolia activated carbon: Adsorption equilibrium, kinetics and thermodynamics study”*, at the National Seminar on Chemistry in Interdisciplinary Research, organized by Department of Chemistry, Nagaland University, 9th–10th November, 2018.

REGIONAL

- Resource person for Hands-on workshop on Herbal lip balm and Soap making organized by Department of Chemistry, Sao Chang College, Tuensang on 26th April 2024

PARTICIPATION IN CONFERENCES/SEMINARS/WORKSHOPS

- National Workshop on Computational Drug Designing-I, organised by BIF Centre, Nagaland University, 5th–6th, 2015.
- Short Term Course on Analytical Techniques for Physical, Chemical and Bio-Inspired Materials, organised by NIT, Dimapur, 23rd–27th July 2018.
- Workshop on Advanced Excel, Advanced Origin, Image J, Patent Writing and Copyright, organised by IIT Guwahati, 8th–11th March 2018.
- Sensitization Workshop on DST Women Scientist Scheme, 4th–5th March 2019.
- One Day Workshop on Importance of IPR in Academic Institutions, organised by IPR Cell, Nagaland University, 29th May 2019.
- Webinar on JCR–South Asia Training and Certification Program 2020, by Web of Science Group, 3rd June 2020.
- Webinar on Biowaste as a Resource for Water Purification, organised by Department of Chemistry, St. John College, Dimapur, Nagaland, 7th August 2020.
- Webinar on Introduction to the Realms of Research, organised by Department of Chemistry, Immanuel College, Nagaland, 28th September 2020.
- Faculty Development Program on Exploring Dynamics of National Education Policy 2020 with Reference to NAAC Perspectives, 12th–18th May 2023, jointly

organized by Faculty of Commerce, Parul University, Gujarat, Research Foundation of India, and RFI-CARE.

- One Day National Seminar on Transformation of HEIs into Multidisciplinary Institutions, organised by HRDC NEHU, Shillong, 5th July 2023.
- Faculty Induction Program, 18th July–17th August 2023, by UGC-HRDC, NEHU.
- Faculty Development Program on Environmental Pollution and Abatement, 4th–9th September 2023, organised by Nagaland University in collaboration with Mahatma Hansraj Faculty Development Centre, Hansraj College, University of Delhi.
- Faculty Development Program on CO-PO Designing, Mapping, Attainment Methods and Continuous Internal Evaluation, 11th–15th September 2023, organised by IQAC Sao Chang College in association with IQAC Cluster, India.
- One Week National E-Workshop on Innovation and Intellectual Property Rights, organised by InTEC, Bhubaneswar, 24th–29th June 2024.
- Online seminar on ‘Empowering women in science: Challenge and Prospects’, organized by Department of chemistry, KSCJ in collaboration with association of Chemistry Teachers, 11th February, 2025.
- One day seminar on greener chemistry and sustainability organized by Department of Chemistry, Patkai Christian College, Chumoukedima, Nagaland in collaboration with Department of Chemistry KSCJ, Jotsoma, Nagaland, 22nd March 2025.
- One Day regional seminar on unlocking potentials: empowering faculty and expanding career opportunities for students, organized by IQAC, KSCJ, Jotsoma in collaboration with Assam Down Town University, Guwahati, 9th April 2025.

RESEARCH SUPERVISION

M,Sc. DISSERTATIONS

Sl. No.	Name of Scholar	Roll. No.	Title
1	Akumniksung Amer	20260123	Pinecone Biochar: A Novel Approach to soil amendments and water remediation
2	Kekhrieletto Nakhro	20011252	Assessment of methyl orange toxicity on plants and its remediation using Biochar

MEMBERSHIPS IN PROFESSIONAL/ACADEMIC BODIES

- Life member of Indian Science Congress Association (Membership No. L29785)
- Life member of Save the Environment society (Membership No. 34)
- Member of Internal quality assurance cell, Sao Chang College, Tuensang, Nagaland (2022-2024)
- Member of Board of Studies, Department of Chemistry, Nagaland University, 2023-2024.

AWARDS AND ACHIEVEMENTS

- STE Young Researcher Award by 'Save the Environment society'
- Gold Medallist, M.Sc Chemistry, Nagaland University
- Qualified CSIR-NET (Chemical Sciences)

PATENTS

- Activated carbon-amended biofilters for sustainable removal of total heterotrophic, coliform, and E. coli bacteria from water.

Application No.: 202331084823 A

Applicant: Nagaland University

Inventors: **Aola Supong**, Temsurenla Jamir, T. Ajungla, Pranjali Bharali, Upasana B. Sinha, Dipak Sinha

Status: Published

Date: 2024 (Published)

Country: India

- A system for the environmentally friendly and rapid synthesis of bromographene (BG) using a more environmentally friendly brominating agent.

Model No.: 20 2024 101 833

IPC: C01B 32/184

Inventors: Suraj Kumar, Dnesh Rangappa, Basanta Singha, Dipak Sinha, Upasana B. Sinha, **Aola Supong**

Date: April 22, 2024

Country: Germany

Status: Granted (German Utility Patent)

- Biofilter system with activated carbon for sustainable removal of bacteria from water.

Model No.: 20 2024 103 105

IPC: B01D 39/06

Inventors: **Aola Supong**, Nagaland University, Dipak Sinha, Upasana Bora Sinha

Date: July 10, 2024

Country: Germany

Status: Granted (German Utility Patent)

- Method for analysing mercury adsorption ability of oxygenated functionals brominated activated carbon.

Patent No.: 2024/04652

Applicants/Inventors: **Aola Supong**, Dipak Sinha, Rituparna Karmaker, Upasana Bora Sinha

Date: January 29, 2025

Country: South Africa

Status: Granted

- A process for synthesis of antibacterial activity exhibiting brominated activated carbon and product thereof.

Patent No.: 2022331055555

Applicant: Nagaland University

Inventors: **Aola Supong**, Parimal Chandra Bhomick, Suraj Kumar, Shisak Sharma, Upasana Bora Sinha, Dipak Sinha

Status: Published/ Awaiting NBA approval for grant (Indian Patent under Section 43)

Country: India

GRANTS AND FELLOWSHIPS

- DST INSPIRE fellowship
- National Fellowship for Higher Education (NFHE)