

Dr. Sunil Kumar Singh

Assistant Professor

Department of Chemical Engineering,
BIT Sindri.

Email ID: sks2041@gmail.com, sunil.che@bitsindri.ac.in

Contact Number: +91- 8146006288

Address: Department of Chemical Engineering,
BIT Sindri, Dhanbad, Jharkhand, PIN - 828123



Educational Qualifications:

Ph.D. Chemical Engineering. **2022**
Indian Institute of Technology (IIT), Guwahati.

M.Tech. Chemical Engineering. **2014**
Indian Institute of Technology (IIT), Kanpur.

B.Tech. Chemical Engineering. **2011**
Birma Institute of Technology (BIT), Sindri.

Research Interest:

- ❖ Micro/Nano fluidics.
 - ❖ Design and fabrication of microreactors, microcrystallizers, and microextractors.
 - ❖ Field driven micro-flow: Electro-hydrodynamics, magneto-hydrodynamics, electro-kinetics.
 - ❖ Bio-physio sensors.
 - ❖ MEMS Theranostic devices.
 - ❖ Colloid and interface science.
 - ❖ Economic plant wide control of complex chemical processes.
 - ❖ Process intensification technologies.
-

Experience:

- ❖ Assistant Professor (on Contract) (21st July 2014 to 18th Dec 2015)
Department of Chemical engineering, **NIT Jalandhar**, Jalandhar, Punjab - 144011
 - ❖ Assistant Professor (Temporary Faculty on Contract) (23rd July 2013 to 31st May 2014)
Department of Biotechnology, **NIT Raipur**, Raipur, Chhattisgarh – 492010
 - ❖ Senior Student Research Associate (1st May 2013 to 22nd July 2013)
Department of Chemical engineering, **IIT Kanpur**, Kanpur, U.P. – 208016
-

Computer Skills:

Software: UNISIM, HYSIS, ASPEN PLUS, SIMULINK, OriginPro, CAD, MS Office package.

Programming Language: C/C++, MATLAB.

Operating system: Windows, Linux.

Publications: (<https://orcid.org/0000-0002-4853-594X>)

[1] **S.K. Singh**, P. Gogoi, A. Deb, P.S. Gooh Pattader, Chiral resolution of racemic amines in μ -

- reactor-crystallizer, *Chem. Eng. Sci.* 256 (2022) 117686.
Doi: <https://doi.org/10.1016/j.ces.2022.117686>.
- [2] **S.K. Singh**, A. Srinivasan, S. Mitra, P.S. Gooh Pattader, Carbon dots and Methylene blue facilitated photometric quantification of Hemoglobin, *Spectrochim. Acta - Part A Mol. Biomol. Spectrosc.* 271 (2022) 120906.
Doi: <https://doi.org/10.1016/j.saa.2022.120906>.
- [3] P. Gogoi, **S.K. Singh**, A. Pandey, A. Chattopadhyay, P.S. Gooh Pattader, Nanometer-Thick Superhydrophobic Coating Renders Cloth Mask Potentially Effective against Aerosol-Driven Infections, *ACS Appl. Bio Mater.* 4 (2021) 7921.
Doi: <https://doi.org/10.1021/acsabm.1c00851>.
- [4] S. Mitra, **S.K. Singh**, E. Shevchenko, M. Sachan, A. Ghosh, M. Basak, P.S. Gooh Pattader, Efficient microextraction process exploiting spontaneous interfacial convection driven by Marangoni and electric field induced instability: A computational fluid dynamics study, *Phys. Fluids.* 32 (2020) 014102.
Doi: <https://doi.org/10.1063/1.5133733>.
- [5] A. Deb, P. Gogoi, **S.K. Singh**, P.S. Gooh Pattader, Noise-Activated Fast Locomotion of DNA through the Frictional Landscape of Nanoporous Gels, *Langmuir.* 38 (2022) 11764.
Doi: <https://doi.org/10.1021/acs.langmuir.2c01897>.
-

Conference/Seminar/ Symposium/Workshop Organized:

- ❖ A National Short Term Training Program on “Recent Advances in Hydrocarbon Engineering” at Dr. B. R. Ambedkar National Institute of Technology Jalandhar, Jalandhar, in the Department of Chemical Engineering from 11th Sept, 2014 to 15th Sept, 2014.
 - ❖ A National Symposium on “Emerging Trends in Mining Industry” at Dr. B. R. Ambedkar National Institute of Technology Jalandhar, Jalandhar, from 12th Sept, 2014 to 13th Sept, 2014.
 - ❖ ISTE Engineering Education Congress and National Seminar on "Sustainability of Engineering Education" at Dr. B. R. Ambedkar National Institute of Technology Jalandhar, Jalandhar, in the Department of Chemical Engineering from 26th March, 2015 to 27th March, 2015.
-

National/International Conference attended:

- ❖ **S.K. Singh**, P.S. Gooh Pattader, Resolution of Tartaric Acid by Excess Enantiomeric Method, “Research Conclave’19” at Indian Institute of Technology Guwahati, Guwahati, 2019.
 - ❖ **S.K. Singh**, A. Srinivasan, S. Mitra, P.S. Gooh Pattader, Hemoglobin Quantification Using Carbon Dots, “Recent Trends in Chemical and Allied Industries - Technology, Economics and Related Issues” at University of Calcutta, Kolkata, 2019.
 - ❖ **S.K. Singh**, P.S. Gooh Pattader, Separation of Enantiomers by Preferential Crystallization Method, First National Student Conference on “Advances in Chemical Engineering” at Assam Engineering College, Guwahati, 2019.
 - ❖ **S.K. Singh**, A. Srinivasan, S. Mitra, P.S. Gooh Pattader, Portable Digital Device for Colorimetric Quantification of Hemoglobin Using Carbon Dots and Methylene Blue Dye, International Conference on “Advances in Chemical Engineering” at UPES, Dehradun, 2020.
-

Symposium/ Workshop/Seminar/ Attended:

- ❖ Industry-Academia Interface Seminar on Upstream Petroleum Engineering at Indian Institute of Technology Guwahati, Guwahati, 2018.

- ❖ 5th National Workshop on NEMS/MEMS & Theranostic Devices at Indian Institute of Technology Guwahati, Guwahati, 2019.
 - ❖ Deep Eutectic Solvents for Environmental Remediation and Energy Storage Seminar at Indian Institute of Technology Guwahati, Guwahati, 2020.
-

Fellowship and Academic Achievements:

- ❖ Awarded MHRD fellowship for Doctor of Philosophy (Ph.D.).
 - ❖ Awarded MHRD fellowship for Master of Technology (M.Tech.).
 - ❖ Ranked amongst the top 2 % in GATE – 2011 in Chemical Engineering.
 - ❖ Secured 1st rank in Ph.D. interview 2015 in the Department of Chemical Engineering at Indian Institute of Technology Guwahati, Guwahati.
-

Award:

- ❖ Best oral presentation (1st position), International Conference on Advances in Chemical Engineering, UPES Dehradun, February 5 – 7, 2020.
 - ❖ Awarded for securing School Top Rank (1st position) in matriculation.
-