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Dipendu Saha

Research Interests

Carbon-based materials for energy storage and environmental remediation, Photocatalysts

Employment History:

- Department Chair
  Chemical Engineering Department, Widener University (2021-current)
- Professor,
  Chemical Engineering Department, Widener University (2026-current)
- Associate Professor
  Chemical Engineering Department, Widener University (2019-current)
- Assistant Professor
  Chemical Engineering Department, Widener University (2013-2019)
- Postdoctoral Research Associate
  Materials Science and Technology Division, Oak Ridge National Laboratory(ORNL), (June 2010 – July 2013)
- Postdoctoral Scientist
  Institut de recherche sur l'hydrogène, Université du Québec à Trois-Rivières, Canada (Nov 2009 – June 2010)
- Graduate Research and Teaching Assistant
  Chemical Engineering Department, New Mexico State University (2006- 2009)

Education

New Mexico State University (USA)	PhD (Hons, GPA 4.0)	2009	Chemical Engineering
Jadavpur University (India)	M. ChE	2006	Chemical Engineering
Vidyasagar University (India)	B. Tech	2003	Chemical Engineering

Awards and Honors

- Outstanding Researcher of Widener University 2021
- Sabbatical award, Fall 2019, Fall 2026.
- Biographical addition in Marqui's Who's Who in America in 2017-2018.
- Honors Certificate from graduate school, New Mexico State University, 2009, USA, for maintaining perfect grade point average (GPA=4.0) in doctoral studies.

- Graduate Assistants Award, academic year 2007-2008, New Mexico State University.
- Bruce Wilson research scholarship, spring 2009, New Mexico State University.

Awarded Research Grants and Proposals

- "Defluorination of PFAS by iron/carbon/nanofiber composites under UVC light" Pennsylvania Water Resources Research Center (PWRRC)/U.S. Geological Survey 2023 Water Resources Research projects USGS 104B, $25,000 (PI: D. Saha) Awarded.
- "Developing Geopolymer Cement using Sewage Sludge Ash as Precursors". EPA P3, 2024, $75,000 (Co-PI: D. Saha) Awarded
- "Adsorptive separation of light paraffin and olefins in Ag(I) and Cu(I) grafted microporous carbons", American Chemical Society sponsored Petroleum Research Fund (ACS-PRF), Undergraduate Research (UR), $70,000, 2018-2021. (PI: D. Saha) Awarded.
- "Developing a Low Cost Wireless Device for Real Time Monitoring of Lead Levels in Drinking Water". EPA P3. $14,935. 2018-2019. (Co-PI: D. Saha) awarded
- "Eager: Adsorptive separation of rare earth elements in DNA grafted mesoporous carbons", National Science Foundation (NSF), $100,000, 2018-2020 (PI: D. Saha), Awarded.
- "Photocatalytic water purification under visible light: A new direction for water treatment process", U.S. Geological survey (USGS) and Pennsylvania Water Resources Research Center (PWRRC), $22,000, 2018-2019 (PI: D. Saha) Awarded.
- "Methane Adsorption in dry and wet micro-mesoporous carbons", American Chemical Society sponsored Petroleum Research Fund (ACS-PRF), Undergraduate New Investigator (UNI), $55,000, 2014-2016. (PI: D. Saha) Awarded.
- User-proposal to Office of Science of U.S. Department of Energy, (Center for Nanophase Materials Science/Oak Ridge national Laboratory), 2016-2017, "Sustainable Route of Synthesis of Hetero-atom Doped Carbons from Bio-mass" (PI: D. Saha). Awarded.
- Ivanhoe foundation sponsored master's thesis, "Sulfur doped nanoporous carbons for heavy metal adsorption", 2015-2016, $5,000 (PI: D. Saha) Awarded.
- Faculty Development Award, Widener University, $2500, 2024-2025 (Awarded, PI: D. Saha)
- Faculty Development Award, Widener University, $2000, 2023-2024 (Awarded, PI: D. Saha)
- Faculty Development Award, Widener University, $2000, 2020-2021 (Awarded, PI: D. Saha)
- Faculty Development Award, Widener University, $1800, 2019-2020 (Awarded, PI: D. Saha)
- Faculty Development Award, Widener University, $4,000, 2018-2019 (Awarded, PI: D. Saha)
- Provost Award, Widener University, $1500, 2018-20 (Awarded, PI: D. Saha)
- Faculty Development Award, Widener University, $3,000, 2016-2017 (Awarded, PI: D. Saha)
- Faculty Development Award, Widener University, $4,700, 2015-2016 (Awarded, PI: D. Saha)
- Provost Award, Widener University, $1500, 2015-2016, (Awarded, PI: D. Saha)

- Faculty Development Award, Widener University, $4,000, 2014-2015 (Awarded, PI: D. Saha)
- Provost Award, Widener University, $500, 2014-2015 (Awarded, PI: D. Saha)

Peer-reviewed publications
(h-index: 41; Total Citations: 6850, as of April 2026)

As Faculty from Widener University, (Aug 2013-current):

** Corresponding author*

1. D. Saha*, R. Schlosser, l. Lapointe, M.L. Comroe, J. Samohod, E. Whiting, D.S. Young, Nanoporous Carbons from hydrothermally treated alga-Role in batch and continuous capacitive deionization (CDI), ***Molecules***, 2025, 30(13), 2848.

2. D. Saha*, A. Ruggiero, S. Gittinger, M. Gross, Plastic derived Nanoporous Carbons for Supercapacitor, ***Waste Management***, 2025, 201, 115255

3. K. Jawaharraj, P. Sigdel, S. Ishii, K. W. Kolasisnki, D. Saha* V. Gadhamshetty*, Removal of Antibiotic Resistance Genes by Electrospun Plasmonic Photocatalyst of Carbon Nitrides and Silver Nanoparticle, ***Environmental Engineering Science*** 2025, 42 (4), 141-154).

4. D. Saha*, S. E. Steger, C. McCullough, B. Eslami, S. E. Van Bramer, Photolytic Decomposition of PFOS by Electrospun Nanofiber Composites of Fe(III)/PVDF Under UV-C light, **Surfaces and Interfaces** 2024, 52, 104990

5. D. Saha*, J. S. Clarke, S. H. Altman, M. A. McCann, R. S. Kamara, A. Gordy, T. Kervick, Selective Extraction and Recovery of Rare Earth Elements from Coal Fly Ash by Carboxylated Mesoporous Carbon. **Separation and Purification Technology** 2025 354 129153

6. N. Al-Hamdani, G. Deluca*, D. Saha, Insights into neodymium interaction with carboxylate-graphene-like support in presence of nitrate: A comparative DFT investigation. **Computational and Theoretical Chemistry**, 2024, 1236, 114598.

7. S. Medha, Z. Romisher, S. Van Bramer, J. Weyrich, S. Khan*, D. Saha*, Enhanced Adsorption of Perfluorooctanesulfonic acid (PFOS) in Fluorine Doped Mesoporous Carbon: Experiment and Simulation. **Carbon** 2024, vol. 218, 118745.

8. D. Saha*, V. Bhasin, S. Khalid, N. Smeriglio, S. Cuka, D. Bhattacharya, J. Rodgers, P. Panja, M. Deo, T. Apple, Adsorption of Rare of Earth Elements in Carboxylated Mesoporous Carbon, **Separation and Purification Technology** 2023, 314, 123583.

9. D. Saha,* G. Orkoulas, D. Bates, One-step Synthesis of Sulfur-Doped Nanoporous Carbons from Lignin with Ultra-High Surface Area, Sulfur Content and CO_2 Adsorption Capacity, ***Materials*** 2023, *16*(1), 455.

10. M. L. Comroe, K. W. Kolasinski, D. Saha*, Direct ink 3D Printing of Porous Carbon Monoliths for Gas Separations, **Molecules** 2022, 27, 17, 5653.

11. P. Gismondi, A. Kuzmin, C. Unsworth, S. Rangan, S. Khalid, D. Saha*, Understanding Adsorption of Rare Earth Elements in Oligo-Grafted Mesoporous Carbon. ***Langmuir*** 2022, 38, 203-210.

12. D. Saha*, M. L. Comroe, R, Krishna, M. Rascavage, J. Larwa, V. You, G. Walawander, B. Bingnear, Separation of Propylene from Propane and Nitrogen by Ag(I)-doped Nanoporous Carbons Obtained from Hydrothermally Treated Lignin. ***Diamond and Related Materials*** 2022, 121, 108750.

13. D. Saha, S. Van Bramer, S. Khan, Can Porous Carbon be a remedy for PFAS Pollution in Water? A Perspective, ***J. Environmental Chem Engg***. 2021, 106665.

14. D. Saha*, M. Kim, R. Babarao, P. Thallapally, Elucidating the Mechanism of Paraffin-Olefin Separation by Nanoporous Adsorbents: A Review. ***iScience*** 2021, 24, 103042

15. D. Saha* M. Comroe, R. Krishna, S. Rangan, Synthesis of Cu(I)-doped mesoporous carbons for selective capture of ethylene from Reaction Products of Oxidative Coupling of Methane (OCM). ***Microporous and Mesoporous Materials*** 2021, 328, 111488.

16. D. Saha*, P. Gismondi, K. W. Kolasinski, S. L. Shumlas, S. Rangan, B. Eslami, A. McConnell, T. Bui, K. Cunfer, Fabrication of Electrospun Nanofiber composite of g-C_3N_4 and Au Nanoparticles as Plasmonic Photocatalyst. ***Surfaces and Interfaces*** 2021, 101367.

17. G. DeLuca, D. Saha*, S. Chakraborty, Why Ag(I) Grafted Mesoporous Carbon Matrix Prefers Alkene over Alkane? An inside view from ab-initio study, ***Microporous and Mesoporous Mater***. 2021, 316, 110940.

18. D. Saha*, M. Visconti, R. Thorpe, Inactivation of antibiotic Resistance Genes by Ternary Nanocomposites of Carbon Nitride, Iron Oxide and Reduced Graphene Oxide, ***Chemical Engg. J.*** 2020, 282, 122857.

19. D. Saha*, B. Toof, R. Krishna, G. Orkoulas, P. Gismondi, R. Thorpe, M. Comroe, Separation of ethane-ethylene and propane-propylene in Ag(I)-doped and sulfurized microporous carbon, ***Microporous and Mesoporous Materials*** 2020, vol. 299, 110099.

20. D. Saha*, T.J. Hoinkis, Electrospun, Flexible and Reusable Nanofiber Mat of Graphitic Carbon Nitride for Photocatalytic Reduction of Hexavalent Chromium, ***J. Colloid and Interface Sci*** 2020, 575, 433-442.

21. C.E. Unsworth, C.C. Kuo, A. Kuzmin, S. Khalid, D. Saha, Adsorption of rare-earth elements in DNA functionalized Mesoporous Carbon, ***ACS Appl. Mater. Interface***, 2020, 12, 43180-43190.

22. D. Saha* C. P. Richards, R. G. Haines, N. D. D'Alessandro, M. J. Kienbaum, C. A. Griffaton, Competitive Adsorption of Lead in Sulfur and Iron Dual-Doped Mesoporous Carbons, ***Molecules*** 2020, vol. 25 pp 403.

23. M. Desipio, S. Van Bramer, R. Thorpe, D. Saha*, Photocatalytic and Photo-Fenton activity of Iron Oxide Doped Carbon Nitride in 3D printed and LED Driven Photon Concentrator, ***J. Hazardous Materials*** 2019, vol. 376, pp 178-187.

24. D. Saha*, M. Kienbaum, Influence of Oxygen, Nitrogen and Sulfur Functionalities on the Surface of Nanoporous Carbons for CO_2 Adsorption: A Critical Review, ***Microporous and Mesoporous Materials,*** 2019, 287, 29-55.

25. D. Saha*, M. M. Desipio, T. J. Hoinkis, E. J. Smeltz, R. Thorpe, D.K. Hensley, S. G. Fischer-Drowos, J. Chen, Influence of Hydrogen Peroxide in Enhancing Photocatalytic Activity of Carbon Nitride Under Visible Light: An Insight into Reaction Intermediates, **J. *Environmental Chemical Engineering*** 2018, 6, 4927-4936.

26. M. M. Desipio, R. Thorpe, D. Saha*, Photocatalytic Decomposition of Paraquat Under Visible Light by Carbon Nitride and Hydrogen Peroxide, ***Opti*k** 2018, 172, 1047-1056

27. D. Saha*, B. Taylor, N. Alexander, D. Joyce, Y. Lin, V. Shteyn, G. Orkoulas, One-Step Conversion of Agro-wastes to Nanoporous Carbons: Role in Separation of CO_2 and SF_6 From N_2, ***Bioresource Technology*****,** 2018, 256, 232-240.

28. D. Saha*, N. Mirando, A. Levchenko, Liquid and Vapor Phase Adsorption of BTX in Lignin Derived Activated Carbon: Equilibrium and Kinetics Study, ***J. Cleaner Production*** 2018, 182, 372-378.

29. D. Saha*, R. Thorpe, S.E. Van Bramer, N. Alexander, D. Hensley, G. Orkoulas, J. Chen, Synthesis of Nitrogen and Sulfur Co-Doped Nanoporous Carbons from Algae: Role in CO_2 Separation, ***ACS Omega*** 2018, vol. *3,* pp 18592–18602

30. D. Saha*, S.D. Akkoyunlu, R. Thorpe, D.K. Hensley, J. Chen, Adsorptive recovery of neodymium and dysprosium in phosphorous functionalized nanoporous carbon, **J. *Environmental Chemical Engineering*** 2017, 4, 4684-4692.

31. D. Saha*, G. Orkoulas, S.E. Van Bramer, H.-C. Ho, J. Chen, D.K. Hensley, CO_2 Capture in Lignin-derived and Nitrogen-doped Hierarchical Porous Carbon, ***CARBON*****,** 2017, 121, 257-266.

32. D. Saha*, G. Orkoulas, S. Yohannan, H.-C. Ho, E. Cakmak, J. Chen, S. Ozcan, Nanoporous Boron Nitride as Exceptionally Thermally Stable Adsorbent: Role in Efficient Separation of Light Hydrocarbons, ***ACS Applied Materials and Interfaces***, 2017, 9, 14506-14517.

33. D. Saha*, J. Chen, D.K. Hensley, Adsorptive separation of CO_2 in sulfur-doped nanoporous carbons: Selectivity and breakthrough simulation. ***Microporous and Mesoporous Materials***, 2017, 241, 226-237.

34. D. Saha*, S. Barakat, Scott E. Van Brammer, K. A. Nelson, J. Chen, D.K. Hensley, Competitive and non-competitive adsorption of heavy-metals in sulfur-functionalized mesoporous carbon. ***ACS Applied Materials and Interfaces***, 2016, 8, 34132–34142.

35. D. Saha*, H. Grappe, A. Chakraborty, G. Orkoulas, Post extraction separation, on-board storage and catalytic conversion of methane in natural gas: A review, ***Chemical Reviews*****,** 2016, 116, 11436–11499.

36. D. Saha*, C.L. Heldt, M.F. Gencoglu, J. Chen, K.S. Vijayaragavan, A. Saskule, A study on the cytotoxicity of carbon-based materials, ***Materials Science and Engineering C***, 2016, 68, 101-108.

37. D. Saha*, A. Spurri, J. Chen, D.K. Helsely, Controlled release of alendronate from nitrogen-doped mesoporous carbons, ***Microporous and Mesoporous Materials***, 2016, 229, 8-13.

38. D. Saha*, B. Tom, T. Fieback, Characteristics of methane adsorption in micro-mesoporous carbons in low and ultra-high pressure, ***Energy Technology***, 2016, 4, 1392-1400.

39. D. Saha*, T. Moken, J. Chen, D. Henseley, K. Delaney, M.A. Hunt, K.A. Nelson, A. Spurri, L. Benham, R. Brice, M. Azorro, Micro-/mesoporous carbons for controlled release of antipyrine and indomethacin. ***RSC Advances*** 2015, 5, 23699-23707.

40. D. Saha*, Yuan Lu, Karl Nelson, Jihua Chen, Soydan Ozcan, CO_2, CH_4 and N_2 adsorption in Micro-mesoporous graphene, ***J. Chemical and Engineering Data*** 2015, 60, 2636-2645

41. M.F. Gencoglu, A. Spurri, M. Franko, J. Chen, D.K. Hensley, C. Heldt, D. Saha*, Biocompatibility of soft-templated mesoporous carbons, ***ACS Appl. Mater Interfaces*** 2014, 6, 15068-15077.

42. A. K. Naskar, Z. Bi, D. Saha, M. Chi, C. A. Bridges, M. P. Paranthaman Tailored Recovery of Carbons from Waste Tires for Enhanced Performance as Anodes in Lithium-Ion Batteries, ***RSC Advances*** 2014, 38213-38221.

43. Invited Book Chapter: D. Saha*, H. Grappe, Adsorption properties of activated carbon fibers (chapter 5) of Book Entitled as ***Activated Carbon Fiber and textiles***. Invited and peer-reviewed book chapter edited by H. Chen (Woodhead publishing/Elsevier), publishing date Dec 2015.

44. Invited Book Chapter: D. Saha*, R. Zacharia, A.K. Naskar, Soft-templated Mesoporous Carbons: Chemistry and Characteristics, ***ACS Symposium Series***, Invited and peer-

reviewed book chapter edited by A.K. Naskar and Wesley P. Hoffman, Vol 1173, Chapter 4, 2014, 61-83.

As Postdoctoral Research Associate:

45. D. Saha, A.E. Payzant, A.S. Kumbhar, A.K. Naskar, Sustainable mesoporous carbons as storage and controlled delivery media for functional molecules, **ACS Appl. Mater. Interfaces** vol. 5, no. 12, pp 5868-5874, 2013.

46. N. Gallego, L. He, D. Saha, Y. Melnichenko, C. I. Contescu, Hydrogen confinement in carbon nanopores: Extreme densification at ambient temperature, **J. Am. Chem. Soc**. vol 133, no. 35, pp 13794-13797, 2011.

47. D. Saha*, C.I. Contescu, N.C. Gallego, Tetrahydrofuran induced K and Li doping on to polyfurfuryl alcohol derived activated carbon: Influence in microstructure and hydrogen sorption properties, **Langmuir** Vol. 28, no. 13, pp. 5669-5677, 2012.

48. D. Ratnaweera, D. Saha, S.V. Pingali, N. Labbe, A.K. Naskar, M. Dadmun, The impact of lignin source on its self-assembly in solution. **RSC Adv**. Vol. 5, pp 67258-67266, 2015.

49. D. Saha, Y. Li, Z. Bi, J. Chen, J.K. Keum, D.K. Hensley, H.A. Grappe, H. Meyer III, S. Dai, M.P. Paranthaman, A.K. Naskar, Studies on supercapacitor electrode material from activated lignin derived mesoporous carbon material. **Langmuir**, vol 30, no. 3 pp 900-910, 2014.

50. D. Saha, K. E. Warren, A.K. Naskar, Soft template synthesized mesoporous carbon as potential materials for oral drug delivery, **Carbon**, vol. 71, pp 47-57, 2014.

51. D. Saha, K. E. Warren, A.K. Naskar, Controlled release of antipyrine from soft templated mesoporous carbon, **Microporous and Mesoporous Materials** vol 196, pp 327-334, 2014.

52. C. I. Contescu, D. Saha, N. Gallego, A. Kolesnikov, E. Mamontov, Restricted dynamics of molecular hydrogen confined in activated carbon nanopores, **Carbon**, vol. 50, no. 3, pp 1071-1082, 2011.

53. D. Saha, C.I. Contescu, N.C. Gallego, Bimodal mesoporous carbon synthesized from large organic precursor and amphiphilic tri-block copolymer, **Microporous and Mesoporous Materials** vol. 155, pp 71-74, 2012.

54. D. Saha, R. Zacharia, L. Lafi, D. Cossement, R. Chahine, Synthesis, characterization and hydrogen adsorption properties of metal-organic framework Al-TCBPB **Intl J. Hydrogen Energy** vol. 37, no. 6, pp 5100-5107, 2012.

55. D. Saha, R. Zacharia, L. Lafi, D. Cossement, R. Chahine, Synthesis, Characterization and Hydrogen adsorption on metal-organic frameworks, Al, Cr, Fe and Ga-BTB, **Chemical Engineering Journal** vol. 171, no. 2, pp 517-525, 2011.

56. D. Saha*, L. He, C.I. Contescu, N.C. Gallego, Y.B. Melnichenko, Experimental evidence of super densification of adsorbed hydrogen by in-situ small-sngle neutron scattering, **MRS Proceedings**, vol. 1334, mrss11-1334-n03-n13, 2011.

As Doctoral Student:

57. D. Saha, S. Deng, Hydrogen adsorption in ordered mesoporous carbon doped with palladium, platinum, nickel and ruthenium, **Langmuir**, vol. 25, no. 21, pp. 12550-12560, 2009.

58. D. Saha, S. Deng, Improved kinetics of THF-H_2 clathrate hydrate formation in porous media, **Langmuir**, vol. 26 no. 11 pp 8414-8418, 2010.

59. D. Saha, S. Deng, Hydrogen adsorption on Pd and Ru doped C_{60} fullerene at an ambient temperature, **Langmuir** vol. 27, no. 11, pp 6780-6786, 2011.

60. D. Saha, S. Deng, Structural stability of metal-organic framework (MOF)-177, **J. Physical Chemistry Letters**, vol.1, no. 1, pp 73-78, 2009.

61. D. Saha, S. Deng, Hydrogen adsorption in partially truncated and open cage C_{60} fullerene. **Carbon**, vol. 48, no. 12, 3471-3476, 2010.

62. D. Saha, Z. Bao, F. Jia, S. Deng, Adsorption of CO_2, CH_4, N_2O and N_2 by MOF-5, MOF-177 and zeolite 5A, **Environmental Science and Technology** vol. 44 no. 5 pp 1820-1826, 2010.

63. D. Saha, Z. Wei, S. Deng, Equilibrium, kinetics and enthalpy of hydrogen adsorption in MOF-177. **Intl. J. Hydrogen Energy**, vol. 33, no. 24, pp. 7479-7488, 2008.

64. D. Saha, Z. Wei, S. Deng, Hydrogen adsorption equilibrium and kinetics in metal-organic framework (MOF-5) synthesized with DEF approach. **Separation and Purification Technology** vol. 64, no. 3. pp. 280-287, 2008.

65. D. Saha, S. Deng, Z. yang, Hydrogen adsorption on metal-organic framework (MOF-5) synthesized by DMF approach. **J. Porous Materials**, vol. 64, pp. 141-149, 2008.

66. D. Saha, S. Deng, synthesis and characterization and hydrogen adsorption in mixed crystals of MOF-5 and MOF-177. **Intl. J. Hydrogen Energy**, vol. 34, no. 6, pp. 2670-2678, 2009.

67. D. Saha, S. Deng, Enhanced hydrogen adsorption in ordered mesoporous carbon though clathrate formation. **Intl. J. Hydrogen Energy** vol. 34, no. 20, pp. 8583-8588, 2009.

68. D. Saha, S. Deng, Equilibrium and kinetics of CO_2, CH_4, N_2O and NH_3 adsorption on to ordered mesoporous carbon synthesized by soft template approach **J. Colloid and Interface Science** vol. 345, no. 2, pp 402-409, 2010.

69. D. Saha, S. Deng, Equilibrium, kinetics and enthalpy of carbon monoxide adsorption on to MOF-5, MOF-177, zeolite 5A and 13X. **Journal of Chemical and Engineering Data** vol. 54, no. 8, pp. 2245-2250, 2009.

70. D. Saha, Z. Wei, S. Velluri, S. Deng, Hydrogen adsorption in ordered mesoporous carbon synthesized by soft template approach. **J. Porous Media** vol. 13, no. 1, pp 39-50, 2008.

71. D. Saha, S. Deng, Ammonia adsorption and its effects on framework stability of MOF-5 and MOF-177, **J. Colloid and Interface Science**, vol. 348, no. 2, pp. 615-620, 2010.

72. L. Camacho, A. Torres, D. Saha, S. Deng, Adsorption Equilibrium and Kinetics of Fluoride on Sol-Gel Derived Activated Alumina Adsorbents, **J. Colloid and Interface Science**, vol. 349, no. 1, pp. 307-313, 2010.

73. D. Saha*, S. Deng, Characteristics of ammonia adsorption on activated alumina, **J. Chemical Engg. Data**, vol. 55, no. 12, pp. 5587-5593, 2010.

74. D. Saha,* S. Deng, Equilibrium, kinetics and Enthalpy of nitrous oxide adsorption on to zeolite 4A and 13X, **J. Chemical Engg. Data**, vol . 55, no. 9, pp 3312-3317, 2010.

75. D. Saha, S. Deng, Hydrogen adsorption on metal-organic framework MOF-177, **Tsinghua Science and Technology** vol. 15, no. 4, 363-376, 2010.

76. J. Wei, Y. Huang, S. Deng, D. Saha, Y. Liu, Q. Rena, Study on alcholysis of isoflavone catalyzed by ionic liquids, **Reaction Kinetics Catalysis Letters**, vol. 95, no. 2, pp. 257-264, 2008.

As Master's Student:

77. D. Saha*, Prediction of mass transfer coefficient in rotating bed contactor (Higee) using artificial neural network. **Heat and Mass Transfer** vol. 45, no. 4, pp. 451-457 2008.

78. D. Saha*, A. Bhowal, Artificial neural network modeling of fixed bed biosorption using radial basis approach. **Heat and Mass Transfer**, vol. 46, no. 4, pp 431-436, 2009.

79. D. Mondal, D. Saha, A. Bhowal, S. Datta, Mass transfer characteristics in extraction by emulsion liquid membrane system-immobilized emulsion phase. **Indian J. Chemical Technology**, vol.15, pp 113-117. March 2008.

Invited Book Chapters

- D. Saha and S. Deng, 'Self-Assembled Ordered Mesoporous Carbon: synthesis, characterization and applications' pp 509-538, invited chapter in book entitled "Activated Carbon: Classifications, Properties and Applications", Nova publishers, 2011.

- D. Saha*, R. Zacharia, A.K. Naskar, Soft-templated Mesoporous Carbons: Chemistry and Characteristics, ACS Symposium Series, Invited and peer-reviewed book chapter edited by A.K. Naskar and Wesley P. Hoffman, Vol 1173, Chapter 4, 2014, 61-83.

- D. Saha, H. Grappe, Adsorption properties of activated carbon fibers (chapter 5) of Book Entitled as Activated Carbon Fiber and textiles. Invited book chapter edited H. Chen (Woodhead publishing/Elsevier), expected publishing date Dec 2015.

Conference Presentations/Invited talks

As Faculty from Widener University, (Aug 2013-current):

1. **Invited Talk**: D. Saha, Adsorptive separation of gas mixtures in Porous Carbons: From CO_2 capture to Olefin enrichment, Advances in Chemical and Environmental Engineering (ACEE-21), 16-17th December 2021, National Institute of Technology) NIT-Raipur, India
2. **Invited Talk**: D. Saha, Separation of Rare Earth Elements (REEs) for Energy Applications Chem Spark 2022, Nov 3-4, 2022. Heritage Institute of Technology (HIT), Kolkata India.
3. D. S. Young. D. Saha, Recycling of lithium-ion battery, **AIChE Annual Meeting**, Boston, Nov 2-6, 2025
4. L. Campbell, D. Saha, Conversion of polyethylene terephthalate (PET) wastes to nanoporous carbons, **AIChE Annual Meeting**, Boston, Nov 2-6, 2025.
5. D. Saha, Selective separation of rare earth elements using functionalized mesoporous carbons, The world conference on carbon (**Carbon 2025)**, Saint Mallo, France
6. D. Saha, Plastic waste-derived nanoporous carbons for supercapacitor, The world conference on carbon (**Carbon 2025)**, Saint Mallo, France.
7. D. Saha, S.E. Steger, C. McCullough, Photolytic Decomposition of Perfluorooctanesulfonic Acid (PFOS) By Composite Nanofibers of Fe(III)/PVDF Under UVC Light, **AIChE annual meeting** 2024, San Diego, CA, Oct 27-31
8. D. Saha, Functionalized Mesoporous Carbon for Chelated Adsorption of Rare Earth Elements (REEs) The world conference on carbon (**Carbon 2023**), Cancun, Mexico, July 16-21, 2023.(**Keynote presentation**)
9. D. Saha, Separation of Light Olefins from Paraffins by Ag(I)-doped Mesoporous Carbons. The world conference on carbon (**Carbon 2023**), Cancun, Mexico, July 16-21, 2023.
10. D. Saha, O. Baturina, Q. Liu, A. Govorov, E. Y. Santiago, K. W. Kolasisnki, Detection of Dimethyl Methyl Phosphonate (DMMP) by Acetylcholinesterase (AChE)-Grafted Plasmonic Sensor. 2022 **Chemical and Biological Defense Science & Technology (CBD) Conference**, San Francisco, CA, Dec 07-08, 2022.
11. D. Saha, B.D. Hoffman, Porous carbon from non-recyclable plastic wastes, **AIChE annual meeting** 2022, Phoenix, AZ, Nov 13-18.

12. D. Saha, M.L. Comroe, Direct ink 3D printing porous carbons, **AIChE annual meeting** 2022, Phoenix, AZ, Nov 13-18.
13. D. Saha, Z. Romisher, J. Weyrich, S. Van Bramer, S. Khan, S. Medha, Adsorption of Pfas in Heteroatom-Doped Mesoporous Carbons: Experiment and Simulation, **AIChE annual meeting** 2022, Phoenix, AZ, Nov 13-18.
14. D. Saha, J. Leplatt, Z. Smith, Photocatalytic Removal of Waterborne Pollutants By Electrospun Nanofibers of Graphitic Carbon Nitride and Titanium Nitride, **AIChE annual meeting** 2021, Boston, MA, Nov 7-19.
15. D. Saha, M. Comroe, Ethylene from OCM Reaction By Cu(I)-Doped Mesoporous Carbon **AIChE annual meeting** 2021, Boston, MA, Nov 7-19.
16. D. Saha. G. DeLuca, Paraffin-Olefin Separation By Ag(I)-Doped Nanoporous Carbons: Experiment and Computation **AIChE annual meeting** 2021, Boston, MA, Nov 7-19.
17. D. Saha, T. J. Hoinkis, Electrospun Nanofibers of Graphitic Carbon Nitride: Role in Environmental Remediation, **ChemCYS,** Blanckenberge, Belgium, February 2020.
18. D. Saha, B. Toof, Separation of Light Olefin and Paraffins by Ag(I) Grafted Nanoporous Carbons, **ChemCYS,** Blanckenberge, Belgium, February 2020.
19. D. Saha, C.E. Unsworth, DNA grafted Mesoporous carbon: A Novel Sorbent for the Separation of Rare Earth Elements, **ChemCYS,** Blanckenberge, Belgium, February 2020.
20. D. Saha, Phosphorous-doped Nanoporous Carbons for Adsorption of Rare Earth Elements, **The World Conference on Carbon**, 2019, Lexington, KY July 14-19.
21. D. Saha, Photocatalytic Inactivation of Antibiotic Resistance Genes by Nanocomposites of Carbon Nitride, **The World Conference on Carbon**, 2019, Lexington, KY July 14-19.
22. D. Saha, M.M. Desipio, Role of 3D Printed and LED-Driven Photostation in Photocatalytic and Photo-Fenton Activity of Iron Oxide Doped Graphitic Carbon Nitride, **AIChE annual meeting**, Orlando, FL, Nov 08-Nov 11, 2019.
23. D. Saha, S.D. Akkoyunlu, Adsorption of Rare Earth Elements in Phosphorous Functionalized Nanoporous Carbon, **AIChE annual meeting**, Pittsburgh, PA, Oct 28-Nov 02, 2018.
24. D. Saha, M.M. Desipio, Enhancement of Photocatalytic Activity of Carbon Nitride By Hydrogen Peroxide Under Visible Light: A Closer Inspection on Reaction Intermediates, **AIChE annual meeting**, Pittsburgh, PA, Oct 28-Nov 02, 2018.
25. G. Orkoulas, D. Saha, Modeling and Simulation of Multicomponent Adsorption Columns, **AIChE annual meeting**, Pittsburgh, PA, Oct 28-Nov 02, 2018.
26. D. Saha, G. Orkoulas, CO_2 capture in Nitrogen-Doped Porous Carbons Synthesized from Biomass, **AIChE annual meeting**, Minneapolis, MN, Oct 29-Nov 03, 2017.
27. G. Orkoulas, D. Saha, Multiscale Modeling of the Breakthrough Behavior of Adsorption Columns, **AIChE annual meeting**, Minneapolis, MN, Oct 29-Nov 03, 2017.

28. D. Saha, G. Orkoulas, S. Yohannan, Nanoporous Boron Nitride: Synthesis, Stability and Gas Separation Characteristics, **AIChE annual meeting**, San Francisco, CA, Nov 13-18, 2016.

29. D. Saha, S. Barakat, Scott E. Van Brammer, Adsorption of Heavy-Metals in Sulfur-Functionalized and Highly Ordered Mesoporous Carbons, **AIChE annual meeting**, San Francisco, CA, Nov 13-18, 2016.

30. D. Saha, T. Fieback, Porous Carbons for Adsorbed Natural Gas (ANG) Revisited: Methane Adsorption in Low and Ultra-High Pressure, **AIChE annual meeting**, San Francisco, CA, Nov 13-18, 2016.

31. D. Saha, Mesoporous carbons as novel materials for passive drug delivery**,** Poster presentation in **The World Conference on Carbon**, The Penn Stater Conference, Center Hotel, State College, Pennsylvania, USA, July 10-15, 2016

32. D. Saha, Sulfur-doped micro-mesoporous carbons for CO_2 separation, Poster presentation in **The World Conference on Carbon**, The Penn Stater Conference, Center Hotel, State College, Pennsylvania, USA, July 10-15, 2016

33. D. Saha, Role of nanoporous carbons in controlled release of drugs, **AIChE annual meeting** 2015, Salt Lake City, UT Nov 8-13.

Previous presentations

34. D. Saha, Y. Li, M.P. Paranthaman, S. Dai, A.K. Naskar, Lignin derived mesoporous carbons for Ultracapacitor electrode material, Electrochemical Energy Storage, Materials, Modeling and Devices I, AIChE annual Meeting 2014, Atlanta, GA, Nov 16-21.

35. D. Saha, A.K. Naskar, Structure and properties of phenolic resin-derived mesoporous carbons, 11^{th} conference on fundamentals of Adsorption (FOA-11), International Adsorption Society (IAS), Baltimore. MD, May 19-24.

36. D. Saha, M.A. Hunt, T. Saito, S. Ozcan, E.A. Payzant, A.K. Naskar, Microstructues of lignin-derived carbon fibers, Division of polymer chemistry, ACS Spring Meeting, New Orleans, LA, April 7-11, 2013.

37. D.R. Ratnaweera, D. Saha, S.V. Pingali, A.K. Naskar, M. Dadmun, Self-assembly of lignin molecules in solution, Division of polymer chemistry, ACS Spring Meeting, New Orleans, LA, April 7-11, 2013.

38. D. Saha, E.A. Payzant, A.S. Kumbhar, A. K. Naskar, Synthesis of porous carbon from renewable precursor, Division of polymer chemistry, ACS Spring Meeting, New Orleans, LA, April 7-11, 2013.

39. D.R. Ratnaweera, N. Henry, D. Saha, A.K. Naskar, M. Dadmun, Neutron scattering studies of renewable materials for carbon fiber fabrication, Division of polymer chemistry, ACS Spring Meeting, New Orleans, LA, April 7-11, 2013.

40. D. Saha, E.A. Payzant, A.K. Naskar, Small-Angle X-ray Scattering (SAXS) of investigation of porous monolithic carbons from phenolic precursor, Plenary sessions on fundamentals and applications of adsorption and ion exchange. AIChE annual meeting, Pittsburgh, PA, Oct 28-Nov 02, 2012.

41. D. Saha, C.I. Contescu, L. He, Y.B. Melnichenko, N.C. Gallego, E. Mamontov, A. I. Kolesnikov, Phase behavior and hydrogen adsorbed in activated carbon nanopores: A Neutron scattering investigation, Plenary session II on fundamentals of adsorption and ion exchange, AIChE annual meeting, Minneapolis, MN, Oct 16-21, 2011.

42. D. Saha, R. Zacharia, L. Lafi, D. Cossement, R. Chahine, Hydrogen adsorption properties of metal-organic framework, Al-TCBPB, Application of adsorption in fuel cells, AIChE annual meeting, Minneapolis, MN, Oct 16-21, 2011.

43. D. Saha, L. He, N. C. Gallego, Y. B. Melnichenko, C.I. Contescu, Experimental evidence of super densification of adsorbed hydrogen by in-situ small angle neutron scattering (SANS), MRS spring meeting, San Francisco, April 25-29, 2011.

44. D. Saha, C.I. Contescu, E. Mamontov, A. I. Kolesnikov, N.C. Gallego, Dynamics of hydrogen adsorbed in microporous carbon by quasielastic neutron scattering (QENS) studies, MRS spring meeting, San Francisco, April 25-29, 2011.

45. D. Saha, S. Deng, Hydrogen sorption properties of Pd-C_{60} and Ru-C_{60} complex at ambient temperature. Paper 717d, Adsorption process in energy in applications, AIChE Annual meeting, Salt Lake City, Nov. 7-12, 2010.

46. D. Saha, S. Deng, Hydrogen storage through clathrate hydrate formation in porous media, paper 165d, Plenary on Fundamentals and applications of adsorption and ion exchange II, AIChE Annual meeting, Nashville, Nov 8-13, 2009.

47. C.I. Contescu, N. C. Gallego, D. Saha, L. He, E. Mamontov, A. I. Kolesnikov, Y. B. Melnichenko, “Phase Behavior and Dynamics of Hydrogen Confined in Activated Carbon Nanopores”, invited feature oral presentation, CESEP ’11 (Carbons for Energy Storage/Conversion and Environment Protection), Vichy, France, September 25-29, 2011.

48. N.C. Gallego, C.I. Contescu, D. Saha, L. He, E. Mamontov, A.I. Kolesnikov, Y. B. Melnichenko, “SANS and QENS studies of phase behavior and dynamics of hydrogen confined in carbon nanopores”, Neutron and X-ray scattering studies of advanced materials V: Centennial, TMS-2012 Meeting, Orlando, Florida, March 11-16, 2012.

49. D. Saha, S. Deng, Adsorption equilibria and kinetics of carbon monoxide on zeolite 5A, 13X, MOF-5 and MOF-177, paper 308a, Experimental methods in adsorption, AIChE Annual meeting, Nashville, Nov 8-13, 2009.

50. D. Saha, S. Deng, Hydrogen adsorption properties and structural stability of metal-organic framework (MOF)-177, Paper 311c, Plenary on Fundamentals and applications of adsorption and ion exchange II, AIChE Annual meeting, Philadelphia, Nov 16-21, 2008.

51. D. Saha, S. Deng, Adsorption and diffusion of gases in MOF-5, MOF-177 and zeolite 5A, Paper 132b, Applications of Adsorption and Ion Exchange, AIChE Annual meeting, Philadelphia, Nov 16-21, 2008.

52. D. Saha, Z. Yang, S. Deng, Adsorption, equilibrium and kinetics of hydrogen in metal-organic framework (MOF)-5, Papers 255b, New Applications of adsorption, AIChE Annual Meeting, Salt lake city, Nov 4-9, 2007.

53. D. Saha, S. Deng, Enhanced hydrogen adsorption by metal-doped ordered mesoporous carbon. 8th world congress of chemical engineering, Montreal, Canada, Aug 23-27, 2009.

54. D. Saha, D. Mondal, A. Bhowal, S. Datta, Mass transfer in extraction by ELM with immobilized emulsion phase. 8th world congress of chemical engineering, Montreal, Canada, Aug 23-27, 2009.

55. D. Saha, Z. Yang, S. Deng, Adsorption Equilibrium and Kinetics of H_2 in Metal Organic Frameworks (MOF)-5" Paper-235, presented at Nanoelectronic Devices for Defense and Security, Arlington, Virginia, USA, June 18-21, 2007.

56. D. Saha, V. Chaitanya, S. Deng, Hydrogen adsorption in ordered mesoporous carbon doped with Pd, Pt, Ru and Ni, 17th Annual International conference on composites/nanoengineering (ICCE-17), 7/26-1/8, 2009, Hawaii, USA.

57. D. Saha, S. Deng, Hydrogen adsorption on partially truncated C_{60} fullerene molecules, 10th International conference on fundamentals of adsorption, International Adsorption Society, Kyoto, Japan, March 23-28, 2010.

58. D. Saha, S. Deng, V. Upadhyayula, G. Smith, M. Mitchell, Adsorption of E. Coli and Staphylococcus Aureus on carbon nanotubes, New Mexico Water Research symposium, Soccoro, 2008.

59. D. Saha, S. Deng, Hydrogen capture by the formation of clathrates hydrates on to porous media, University Research Council fair, 2009, New Mexico State University, USA.

60. D. Saha, S. Deng, Exceptional hydrogen capacity of MOF-177 for PEM fuel cell driven automobiles, Graduate research and arts symposium 2008, New Mexico State University, USA.

61. D. Saha, S. Deng, MOF-177: Promising candidate of hydrogen storage for fuel cell driven automobiles, University Research Council fair, 2008, New Mexico State University, USA.
62. D. Saha, Z. Yang, S. Deng, Adsorption equilibrium and kinetics of H_2 in metal-organic framework (MOF)-5, University Research Council fair, 2007, New Mexico State University, USA.

63. D. Saha, Ordered Mesoporous Carbon: Ideal adsorbents for carbon dioxide, methane, nitrous oxide and ammonia. Graduate research and arts symposium 2009, New Mexico State University, USA.

Professional Activities
Session Chair:

- Session co-chair (AIChE fall meeting 2011): Applications of adsorption in fuel cells
- Session chair (AIChE fall meeting 2012): Adsorbent materials for sustainable energy
- Session chair (AIChE fall meeting 2013): Experimental methods in adsorption
- Session chair (AIChE fall meeting 2014): Adsorbent materials for sustainable energy
- Session Chair (AIChE fall meeting 2015): Adsorbent materials
- Session Chair (AIChE fall meeting 2016): Adsorbent materials
- Session Chair (AIChE fall meeting 2017): Adsorbent materials
- Session Chair (AIChE fall meeting 2018): Adsorbent materials
- Session Co-Chair (AIChE fall meeting 2019): Adsorbent materials
- Session Co-Chair (AIChE fall meeting 2020): Adsorption materials
- Session Chair (AIChE fall meeting 2021): Adsorbent materials for sustainability

SYNERGISTIC ACTIVITIES

- Peer-Reviewer of 26 scientific Journals from Elsevier, American Chemical Society (ACS), Royal Chemical Society (RSC), Wiley-VCH, American Institute of Physics (AIP) & Taylor and Francis.

- Session chair and co-chair of Adsorption and Ion Exchange division (area 2e), American Institute of Chemical Engineers (AIChE) annual meetings, 2011-2023.

- Proposal Reviewer: (a) USA: National Science Foundation (NSF), American Chemical Society sponsored Petroleum Research Fund (ACS-PRF); (b) Canada: Canada Foundation for Innovation. (c) Israel: Israel Research Foundation (ISF); (d) Saudi Arabia: International collaborative proposal of King Abdullah University of Science and Technology (KAUST); (e) Iceland: Icelandic Research Foundation (Rannis).

Referee of peer reviewed journals:

- Royal Society of Chemistry: Chemical Communication; Journal of Materials Chemistry; Journal of Materials Chemistry A, RSC Advances; Dalton Transactions, Energy and Environmental Science, New Journal of Chemistry

- American Chemical Society: Industrial Engineering and Chemistry Research; Journal of Chemical Physics Letters, ACS Applied Materials and Interfaces, Journal of Chemical and Engineering Data, Journal of Physical Chemistry C, JACS

- Elsevier: Chemical Engineering Journal, Chemical Physics Letters, International Journal of Hydrogen Energy, Fuel, Powder Technology, Separation and Purification Technology, Carbon, European Journal of pharmaceuticals and biopharmaceuticals, European Journal of pharmaceutical Sciences, Applied Energy,

- Wiley-VCH: Zeitschrift für Anorganische und Allgemeine Chemie (Zaac), AIChE J.

- American Institute of Physics (AIP): Journal of Chemical Physics.

- Taylor & Francis: Separation Science and Technology

Guest Editorial Positions

a) Journal name: Discover Chemical Engineering (Publisher: Springer Nature); Special issue on Chemical Engineering in Water Treatment. Weblink: https://link.springer.com/collections/agdeggacef
b) Journal name: Molecules (Publisher: MDPI); Special issue on Carbon-Based Materials for Sustainable Chemistry, 2nd Edition. Weblink: https://www.mdpi.com/journal/molecules/special_issues/OCWTOT8012
c) Journal name: Molecules (Publisher: MDPI); Special issue on Carbon-Based Materials for Sustainable Chemistry, Weblink: https://www.mdpi.com/journal/molecules/special_issues/Carbon_Sustainable
d) Journal name: Molecules (Publisher: MDPI); Porous Carbon and Their Applications, Weblink: https://www.mdpi.com/journal/molecules/special_issues/Porous_Carbon_Material

Member: American Institute of Chemical Engineers (AIChE), American Chemical Society (ACS), Materials Research Society (MRS)

Courses Taught

- Engineering Thermodynamics (Undergraduate)
- Transport Phenomena (Undergraduate and graduate)
- Mass Transfer (Undergraduate and graduate)
- Unit Operations Laboratory (Undergraduate)
- Independent study/research of undergraduate students (Undergraduate and graduate)
- Senior Project (Undergraduate)

- Master's Thesis

Service as Department Chair of Chemical and Materials Engineering

- Took a lead role in changing the name of the department to "Chemical and Materials Engineering" and completed the necessary steps.
- Took a lead role in modernizing the curriculum of the department and introduced new courses on materials engineering (CHE 301) and chemical process safety (CHE 270).
- Designed, instructed and executed online Widener Day and accepted student day activities during Covid (AY 2020-AY 2021).
- Met with the prospective students and parents outside Widener Days and Accepted Student Days within AY 2020-Current.
- Presented in Engr 111 seminar in Fall semesters, AY 2021-current.
- Designed and executed all the summer camp activities for ChE department, AY 2022-current.
- Designed and executed Engineering Minicamp for ChE department, AY 2021-current.
- Designed and executed ChE Workshop, AY 2021-current.
- Assisted in ABET self-study report, 2021
- Took a lead role in designing and obtaining Senior exit survey and Alumni survey for ABET self-study report, 2021