

Nicholas J. Corrente, MS

Email: nicholas.corrente@rutgers.edu

ORCID iD: orcid.org/0000-0001-5765-1806

APPOINTMENTS

Teaching Instructor: Rutgers University – New Brunswick, NJ, USA

Fall 2024 - Present

Lecturer: Rutgers University – New Brunswick, NJ, USA

Summer 2022 - Summer 2024

EDUCATION

Rutgers University – New Brunswick, NJ, USA

September 2019 - Present

PhD Candidate – Chemical and Biochemical Engineering, Advisor: Alexander V. Neimark

Expected 2024

Master of Science – Chemical Engineering

May 2023

New Jersey Institute of Technology – Newark, NJ, USA

May 2019

Bachelor of Science – Chemical Engineering

Seton Hall University – South Orange, NJ, USA

August 2016

Bachelor of Science – Chemistry

AWARDS

Teaching

2023-2024 Rutgers University CBE Outstanding Faculty Award

Spring 2024

2023-2024 Rutgers University CBE-GSO Researcher-Scholar Award

Spring 2024

2023-2024 Rutgers University EGC Professor of the Year Award

Spring 2024

2022-2023 Rutgers University EGC Professor of the Year Award

Spring 2023

Research

Rutgers University Department of Chemical and Biochemical Engineering Venkat Fellowship

Fall 2023 - Spring 2024

CPM-9 First Place Best Poster Award

Spring 2024

2023 Rutgers University SGS Travel Grant

Spring 2023

2022 DOE/NSF Travel Grant

Spring 2022

2022 Rutgers University SGS Travel Grant

Spring 2022

2021 International Adsorption Society Best Poster Award

Fall 2021

2020 International Adsorption Society Travel Grant

Spring 2020

TEACHING EXPERIENCE

Lecturer: Rutgers University – New Brunswick, NJ, USA

(14:155:208) Chemical Engineering Thermodynamics I

Spring 2024, Summer 2024

(14:155:201) Chemical Engineering Material and Energy Balances

Fall 2023, Summer 2024

Responsibilities: Developing and delivering course curriculum.

Instructor: Rutgers University – New Brunswick, NJ, USA

(14:155:208) Chemical Engineering Thermodynamics I

Spring/Summer 2023, Summer 2022

Responsibilities: Developing and delivering course curriculum.

Guest Lecturer: New Jersey Institute of Technology – Newark, NJ, USA

Spring 2021

Course: Python Programming for Chemical Engineers

Responsibilities: Delivered one lecture on python for thermodynamic calculations.

Teaching Assistant: Rutgers University – New Brunswick, NJ, USA

Courses:

- (16:155:511) Advanced Chemical Engineering Thermodynamics – Fall 2022
- (14:155:208) Chemical Engineering Thermodynamics I – Spring 2021
- (14:155:307) Computational Methods in Chemical Engineering – Fall 2020

RESEARCH EXPERIENCE

PhD Student

2019 - Present

Department of Chemical and Biochemical Engineering– Rutgers University
Coupling Adsorption and Mechanical Properties of Nanoporous Carbon using 3D Molecular Models
Advisor: Prof. Alexander V. Neimark

NSF INTERN

September 2021 - August 2023

ExxonMobil Technology and Engineering Company – Annandale, NJ, USA
Advisor: Dr. Peter I. Ravikovitch

Provost Summer Research Fellowship

Summer 2018

New Jersey Institute of Technology

Undergraduate Research Assistant

January 2018 - August 2019

Computational Laboratory for Porous Materials – New Jersey Institute of Technology
Advisor: Prof. Gennady Y. Gor

PUBLICATIONS

P. Kowalczyk, S. Furmaniak, A.P. Terzyk, **N.J. Corrente** A.V. Neimark (2024). Surface Area and Porosity Analysis in Nanoporous Carbons by Atomistic Pore Domain Model. *Carbon*. DOI: 10.1016/j.carbon.2024.119510

S. Parashar, **N.J. Corrente**, A.V. Neimark. Thermal Fluctuations and Framework Flexibility of IRMOF-1 upon CH₄ and CO₂ Adsorption. Preprint available on ChemRxiv. DOI: 10.26434/chemrxiv-2024-m5wkv

N.J. Corrente, E.L. Hinks, A. Kaser, J. Liu, A.V. Neimark (2024). Deformation of Nanoporous Carbons Induced By Multicomponent Adsorption: Insight from the SAFT-DFT Model. *J Phys Chem C*. Selected cover article. DOI: 10.1021/acs.jpcc.4c00833

F. Vallejos-Burgos, C. de Tomas, **N.J. Corrente**, K. Urita, S. Wang, C. Urita, I. Moriguchi, I. Suarez-Martinez, N. Marks, M.H. Krohn, R. Kukobat, A.V. Neimark, Y. Gogotsi, K. Kaneko (2023). 3D Nanostructure Prediction of Porous Carbons via Gas Adsorption. *Carbon*, 215, 11843. DOI: 10.1016/j.carbon.2023.118431

N.J. Corrente, E.L. Hinks, A. Kaser, P.I. Ravikovitch, A.V. Neimark (2022). Modeling Adsorption of Simple Fluids and Hydrocarbons on Nanoporous Carbons. *Carbon*, 197, 526-533. DOI: 10.1016/j.carbon.2022.06.071

N.J. Corrente, K. Zarębska, A.V. Neimark (2021). Deformation of Nanoporous Materials in the Process of Binary Adsorption: Methane Displacement by Carbon Dioxide from Coal. *J Phys Chem C*, 125(38), 21310-21316. DOI: 10.1021/acs.jpcc.1c07363

N.J. Corrente, C. D. Dobrzanski, G. Y. Gor (2020). Compressibility of Supercritical Methane in Nanopores: A Molecular Simulation Study. *Energy Fuels*, 34(2), 1506-1513. DOI: 10.1021/acs.energyfuels.9b03592

C. D. Dobrzanski, **N. J. Corrente**, G. Y. Gor (2020). Compressibility of Simple Fluid in Cylindrical Confinement: Molecular Simulation and Equation of State Modeling. *Ind Eng Chem Res*, 59(17), 8393-8402. DOI: 10.1021/acs.iecr.0c00693

INVITED TALKS

N.J. Corrente, E.L. Hinks, A. Kaser, R. Gough, A.V. Neimark. *Applications of 3D Amorphous Carbon Molecular Models for Adsorption and Mechanical Property Predictions*. New Jersey Institute of Technology – 12 April 2024. Newark, NJ.

N.J. Corrente, K. Zarębska, A.V. Neimark. *Deformation of Nanoporous Materials in the Process of Binary Adsorption*. 2nd Annual International Adsorption Society Webinar Series – 17 August 2021.

PRESENTATIONS

N.J. Corrente, E.L. Hinks, A. Kaser, R. Gough, P.I. Ravikovitch, A.V. Neimark. *Applications of 3D Amorphous Carbon Molecular Models for Adsorption and Mechanical Property Predictions*. CPM-9 – 21 May 2024. Delray Beach, FL.

N.J. Corrente, E.L. Hinks, A. Kaser, R. Gough, P.I. Ravikovitch, A.V. Neimark. *Adsorption-Induced Deformation of Nanoporous Carbons with Mixtures: A Hybrid MC/MD Approach*. 2023 AIChE Annual Meeting – 9 November 2023. Orlando, FL.

N.J. Corrente, A.V. Neimark. *Deformation of Nanoporous Carbons Induced By Multicomponent Adsorption: Insight from the SAFT-DFT Model*. 2022 AIChE Annual Meeting – 17 November 2022. Phoenix, AZ.

N.J. Corrente, E.L. Hinks, A. Kaser, R. Gough, A.V. Neimark. *Deformation of Nanoporous Carbons in the Process of Binary Adsorption*. 2022 Fundamentals of Adsorption 14th International Conference – 26 May 2022. Boulder, CO.

N.J. Corrente, E.L. Hinks, A. Kasera, R. Gough, A.V. Neimark. *Deformation of Amorphous Carbons in the Process of Binary Adsorption*. Otto H. York Department of Chemical and Materials Engineering 3rd Molecular Simulations Workshop — 13 May 2022. NJIT, University Heights, Newark, NJ.

N.J. Corrente, E.L. Hinks, A. Kasera, P.I. Ravikovitch, A.V. Neimark. *Modeling Hydrocarbons Adsorption in Amorphous Nanoporous Carbonaceous Materials*. 2021 AIChE Annual Meeting — 10 November 2021. Boston, MA.

N.J. Corrente, E.L. Hinks, A.V. Neimark. *Deformation of Amorphous Nanoporous Carbons in the Process of Methane Displacement By Carbon Dioxide*. 2021 AIChE Annual Meeting — 9 November 2021. Boston, MA.

SERVICE TO RUTGERS UNIVERSITY

CBE Undergraduate Awards Committee	Spring 2024
Organizer: CBE PhD Panel Series	2024 - Present
Faculty Advisor: American Institute of Chemical Engineers Student Chapter, Rutgers University	2023 - Present
Rutgers University Aresty Research Mentor	2022 - Present
Rutgers University J.J. Slade Scholars Research Mentor	2022 - 2023
Rutgers University REU Research Mentor	Summer 2021

SERVICE TO THE PROFESSION

Member: International Adsorption Society Education Committee	2021 - Present
<ul style="list-style-type: none">Responsible for scheduling and moderating monthly webinar series.	
Member: AIChE Area 2E	2021 - Present
Session Chair / Co-Chair for AIChE Area 2E molecular modeling sessions	2020 - Present
Secretary / Website Developer: 9th Characterization of Porous Materials Workshop	2019 - Present
<ul style="list-style-type: none">Responsible for coordination of logistics, abstract submissions, and dissemination of information for the upcoming international conference.	
Member: Omega Chi Epsilon Eta Chapter	2019 - Present

SERVICE TO THE COMMUNITY

Team Leader: Pursells Pack, New Jersey Pancreatic Cancer Action Network	2013 - Present
Lead Advisor: Venture Crew 890, Patriots' Path Council, Boy Scouts of America	2015 - Present
Eagle Scout Advisor: Troop 72, Patriots' Path Council, Boy Scouts of America	2018 - Present
Publicity Chair: Fishawack District, Patriots' Path Council, Boy Scouts of America	2017 - 2019