NASAH, JUNIOR NEGUIEH DOMKAM

Director – Center for Process Engineering Research | University of North Dakota| LinkedIn
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EDUCATION & EARLY BACKGROUND

University of North Dakota, Grand Forks, ND
Ph.D. in Chemical Engineering **2025**

M.Sc. in Chemical Engineering **2012**

University of Buea, Cameroon
B.Sc. in Chemistry **2007**

PROFESSIONAL EXPERIENCE

College of Engineering & Mines Research Institute, University of North Dakota (UND)
Director – Center for Process Engineering Research **Dec 2025 - Present**
Associate Director – Center for Process Engineering Research **Jul 2025 - Dec 2025**
Duties include managing day-to-day activities at the Center, allocating resources to meet proposal development needs and establishing a three-year vision for the Center. Technical lead of the Center's carbon management group.

College of Engineering & Mines Research Institute, UND
Associate Director – Center for Process Engineering Research **2022 – 2025**
Duties include assisting the Institute's Director with day-to-day managerial activities of CPER and implementing the Institute's research vision within the Center, overseeing personnel coverage, and identifying future strategic needs.

College of Engineering & Mines Research Institute (formerly Institute for Energy Studies), UND
Manager Major Projects **2019 – 2022**
Duties consisted of submitting competitive research proposals and managed funded research projects with roles including technical execution of project scope, project reporting, and mentoring of students.

Institute for Energy Studies, UND
Research Engineer **2012 – 2019**
Executed research project activities, prepared project reports, assisted supervisor with proposal development research and trained students on university equipment.

Department of Petroleum Engineering, UND
Laboratory Manager **2013 – 2016**
Established new petroleum engineering laboratories and instructed laboratory activities.

Department of Chemical Engineering, UND
Research Assistant **2010 - 2012**
Evaluated a mercury mitigation technology at Taconite processing plants.

EXTERNAL FUNDING RECORD (2013 – CURRENT)

Total Number and Budget for Competitive Proposals Submitted	**48**	**$20.3 million**
Total Number and Funding Awarded	**18**	**$6.2 million**

REPORTS, PUBLICATIONS AND CONFERENCE PRESENTATIONS

TECHNICAL REPORTS

Nasah, Junior, Van Der Watt, Johannes, Ikuerowo, Temitayo, et al., *Modular Biomass Gasification for Co-Production of Hydrogen and Power*. No. DOE-UND-32182. Univ. of North Dakota, Grand Forks, ND (United States), ***Planned 2026***.

Nasah, Junior, Bellal, Abdelmalek, Andraju, Nagababu, et al., *Non-Catalytic Pyrolysis of Associated Gas to Zero Co2 Hydrogen and High Value Carbon Black*. No. DOE-UND-32234. Univ. of North Dakota, Grand Forks, ND (United States), 2025.

Nasah, Junior, Johannes George van der Watt, Michael Mann, Mark Musich, Srivats Srinivasachar, Aaron Koenig, Teagan Nelson, Alex Benson, Matt Fuka, and Steve Benson. *Low-Cost Recyclable Oxygen Carrier and Novel Process for Chemical Looping Combustion*. No. DOE-UND-IES-31534. Univ. of North Dakota, Grand Forks, ND (United States), 2022.

Nasah, Junior, Johannes Van der Watt, Aaron Koenig, Srivats Srinivasachar, Teagan Nelson, and Mark Musich. *Techno-economic Analysis for a Low Cost and Recyclable Oxygen Carrier*. Univ. of North Dakota, Grand Forks, ND (United States), 2022.

Nguyen, Nicole Lindsay, **Junior Nasah**, Steve Benson, Srivats Srinivasachar, Alex Benson, Hannah Huffman, David Stadem et al. *Mitigation of Aerosol Impacts of Ash Deposition and Emissions from Coal Combustion (Final Technical Report)*. No. DOE-BARR-0031756. Barr Engineering Company, Minneapolis, MN (United States), 2022.

Srinivasachar, Srivats, Teagan R. Nelson, **Junior Nasah**, Benjamin R. Jensen, and Michael D. Mann. *Method for separation of coal conversion products from sorbents/oxygen carriers*. No. DOE-ENVERGEX-SC0013832PhII. Envergex LLC, Sturbridge, MA (United States), 2019.

Srinivasachar, S., Nelson, T., **Nasah, J.**, Laudal, D.**,** Benson, S. "Phase 1 Final Technical Report – Mitigation of aerosol emissions from solvent-based post-combustion CO2 capture systems." No. DOE-ENVERGEX-SC0015737. 2017.

Srinivasachar, S. Laudal, D.**,** Krishnamoorthy, G., **Nasah, J**., van der Watt, J. "Phase 1 Final Technical Report – Spouted fluidized beds for chemical looping combustion." DOE award number: DE-SC0015204. Dec. 2016.

JOURNAL PUBLICATIONS

Bankefa, Temitope, **Junior Nasah**, Daniel Laudal, and Nagababu Andraju. "Advances in efficient utilization of low-rank fuels in coal and biomass-fired systems: a comprehensive review." Energy & Fuels 38, no. 10 (2024): 8460-8480.

Bellal, Abdelmalek, Xiaodong Hou, **Junior Nasah**, Johannes Van der Watt, Daniel Laudal, and James Hoffman. "Performance and economic viability assessment of a novel CO2 adsorbent for manufacturing and integration with coal power plants." Chemical Engineering Journal 498 (2024): 155604.

Khan, Shabaz, Nicholas Dyrstad-Cincotta, **Junior Nasah**, Ajit Bhat, James Rickson, and Michael Mann. "Electrostatic Lubricant Filter Design Study." In 2022 IEEE Conference on Electrical Insulation and Dielectric Phenomena (CEIDP), pp. 95-98. IEEE, 2022.

Nasah, Junior, Ben Jensen, Nicholas Dyrstad-Cincotta, Jackson Gerber, Daniel Laudal, Michael Mann, and Srivats Srinivasachar. "Method for separation of coal conversion products from oxygen carriers." International Journal of Greenhouse Gas Control 88 (2019): 361-370.

Pei, Peng, **Junior Nasah**, Jaroslav Solc, Scott F. Korom, Daniel Laudal, and Kirtipal Barse. "Investigation of the feasibility of underground coal gasification in North Dakota, United States." *Energy Conversion and Management* 113 (2016): 95-103.

Pei, Peng, Kirtipal Barse, and **Junior Nasah**. "Competitiveness and cost sensitivity study of underground coal gasification combined cycle using lignite." *energy & fuels* 30, no. 3 (2016): 2111-2118.

Pei, Peng, Scott F. Korom, Kegang Ling, and **Junior Nasah**. "Cost comparison of syngas production from natural gas conversion and underground coal gasification." *Mitigation and adaptation strategies for global change* 21, no. 4 (2016): 629-643.

Pei, Peng, Daniel Laudal, **Junior Nasah**, Scott Johnson, and Kegang Ling. "Utilization of aquifer storage in flare gas reduction." Journal of Natural Gas Science and Engineering 27 (2015): 1100-1108.

Pei, Peng, Kirtipal Barse, Andres J. Gil, and **Junior Nasah**. "Waste heat recovery in CO2 compression." *International Journal of Greenhouse Gas Control* 30 (2014): 86-96.

CONFERENCE PROCEEDINGS

Nasah, Junior, Johannes Van der Watt, Aaron Koenig, Srivats Srinivasachar, Teagan Nelson, and Mark Musich. "Techno-economic Analysis for a Low Cost and Recyclable Oxygen Carrier." 46th International Technical Conference on Clean Energy, Clearwater, 2022.

Bankefa, Temitope, **Nasah, Junior,** Mann, Michael, Oluwayomi, Joshua, Srinivasachar, Srivats, Nelson, Teagan, Benson, Steve. "Mitigation of Aerosol Impacts from Com Coal Combustion Processes." 39th International Pittsburgh Coal Conference, Pittsburgh, 2022

Nguyen, Nicole, Benson, Steve, **Nasah, Junior**, et al., "Mitigation of Alkali Induced Aerosols," (2022), https://doi.org/10.2172/1907526

Aaron Koenig, Teagan Nelson, Srivats Srinivasachar, **Junior Nasah** and Johannes van der Watt. "Flexible Low Temperature CO2 Capture System, E-Cachys™." In *2021 AIChE Annual Meeting*. AIChE, 2021.

Nasah, Junior, Jensen, Ben, Dyrstad-Cincotta, Nicholas, Gerber, Jackson, Laudal, Daniel, Mann, Michael, Srinivasachar, Srivats. "Segregation of Unreacted Char from Oxygen Carriers During Chemical Looping Combustion." In 5th International Conference on Chemical Looping, Utah, 2018

Nasah, Junior, Srinivasachar, Srivats. "Method for Separation of Coal Conversion Products from Sorbent/Oxygen Carriers." 34th Annual International Pittsburgh Coal Conference, Pittsburgh, 2017

Pei, Peng, **Nasah, Junior**, Solc, Jarda, Korom, Scott F. "Feasibility Study of Underground Coal Gasification in Western North Dakota." 31st Annual International Pittsburgh Coal Conference, Pittsburgh, 2014

PATENTS (PENDING)

Hou, Xiaodong, Abdelmalek Bellal, **Junior Nasah**, and Johannes George van der Watt. "Potassium carbonate-based sorbent for CO_2 capture." U.S. Patent Application 19/048,491 filed February, 2025.

Junior Nasah and Abdelmalek Bellal. "Flow Regulation of Produced Associated Petroleum Gas." U.S. Provisional Provisional 63/887,077 filed on September 24, 2025