

Nam, Hoang Truong

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RESEARCH OVERVIEW

I specialize in computational materials science, leveraging advanced atomistic simulations and electronic structure methods to study the physicochemical properties of emerging catalysts and functional materials for sustainable energy applications.

EDUCATION

2024.08 M.S., Graduate School of Energy Science and Technology, Chungnam National University (**GPA: 4.35/4.5**)

Thesis: Rational design of transition metal-doped FeTe₂ catalysts for electrochemical NH₃ production: A computational study

Advisor: Dr. Hyeyoung Shin, Ph.D. and Dr. Truong Ba Tai, Ph.D.

2022.02 B.E., Chemical Engineering, Can Tho University (**GPA: 3.29/4.0**)

Thesis: Optimization of methyl blue degradation in aqueous solution under non-thermal plasma by response surface methodology

Advisor: Dr. Ho Quoc Phong, Ph.D.

EXPERIENCE

2024.11 – 2025.08 Research assistant, Thailand Institute of Nuclear Technology (TINT).

Advisor: Dr. Wasin Vechgama, Ph.D.

Research interest: Comparative standard of severity scales on human-made accidents in nuclear and chemical industries.

2022.03 – 2024.08 Research assistant, Computational Energy Materials Design Laboratory, Chungnam National University, South Korea.

Advisor: Dr. Hyeyoung Shin, Associate Professor, Ph.D.

Research interest: In-silico design of materials for energy and environmental applications (green NH₃ synthesis, hydrogen evolution reaction).

2020.01 – 2022.02 Research assistant and Laboratory assistant manager, Biomedical Materials Laboratory, Can Tho University, Vietnam.

Advisor: Dr. Ho Quoc Phong, Associate Professor, Ph.D.

Research interest: Investigation and optimization of the degradation of methyl blue under the non-thermal plasma treatment.

PUBLICATIONS

01. W. -G. Lim⁺, **N. H. Truong⁺**, J. Y. Jeong⁺, D. Kim, L. S. Oh, C. Jo, H. J. Kim, S. M. Choi^{*}, **H. Shin^{*}**, S. Lee^{*}, E. Lim^{*}, "Toward feasible single atom-based hydrogen evolution electrocatalysts *via* artificial ensemble sites for anion exchange membrane water electrolyzer", [Appl. Catal. B: Environ., 343, 123568 \(2024\)](#) (⁺: equal contribution)

02. **N. H. Truong**, J. S. Kim, J. Lim^{*}, **H. Shin^{*}**, "Electrochemical reduction of nitrate to Ammonia: Recent progress and future directions", [Chem. Eng. J., 495, 153108 \(2024\)](#)

03. Q. P. Ho^{*}, **N. H. Truong**, P. T. Lam, T. B. T. Nguyen, D. V. Nguyen, H. H. G. Pham, and L. H. Huynh, "Optimization of non-thermal plasma process to remove methyl blue towards application in wastewater treatment", [CTU J. Innov. Sustain. Dev., 16 \(Special issue: ICCEE\), 64–73 \(2024\)](#)

AWARDS AND GRANTS

- 2024** Excellence Award of the Chungnam National University Outstanding Research Award, Chungnam National University.
- 2022 – 2024** The 21st Brain Korea (BK21) Scholarship Program, Ministry of Education of South Korea and National Research Foundation of Korea (NRF).
- 2021** Recipient of the Encouraging Study Scholarship for Undergraduate Student Issued by Can Tho University.
- 2020** Delegate at the 8th ASEAN Students Leader Forum, Chiang Mai University, Thailand (Fully funded).
- 2019** Delegate at the Festival of Ideas 2019: Future Thinking & Scenario Planning Workshop for Youths, National University Singapore (Fully funded).

PRESENTATIONS

- 2024.08** Truong, N. H. (2024). *“Exploring single transition-metal incorporated FeTe₂ electrocatalyst for efficient electrochemical reduction of nitrogen to ammonia”*, **Poster** presented at MCARE, Jeju, Korea.
- 2024.07** Truong, N. H. (2024). *“Toward feasible single atom-based hydrogen evolution electrocatalysts via artificial ensemble sites for anion exchange membrane water electrolyzer”*, **Poster** presented at NANO KOREA 2024, Seoul, Korea.
- 2023.12** Truong, N. H. (2023). *“A theoretical exploration into efficient electrocatalyst design for electrochemical ammonia production”*, **Oral presentation** at Carbon Zero Green Ammonia Cycling Research Center, Busan, Korea.
- 2023.10** Truong, N. H. (2023). *“In-silico design of single transition-metal incorporated FeTe₂ for efficient electrochemical reduction of nitrogen to ammonia”*, **Oral presentation** at KICHe Fall Meeting and International Symposium, Daejeon, Korea.
- 2023.10** Truong, N. H. (2023). *“Designing of electrochemical nitrogen reduction reaction catalysts: A first-principles study”*, **Poster** presented at ICMS, The 6th International Conference on Molecular Simulation, Taipei, Taiwan.
- 2023.02** Truong, N. H. (2023). *“Computational screening of new electrocatalysts for electrochemical nitrogen reduction reaction”*, **Oral presentation** at Carbon Zero Green Ammonia Cycling Research Center, Busan, Korea.

SKILLS

Computational chemistry: DFT (VASP), AIMD, Microkinetics

Software: VESTA, Materials Studio, Linux terminal

Programming: Python (pandas, matplotlib, seaborn)

Languages: English (IELTS 6.5) – Academic writing and presentations

REFEREES

- Dr. Hyeyoung Shin**, Associate Professor, Graduate School of Energy Science and Technology, Chungnam National University, South Korea.
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- Dr. Ho Quoc Phong**, Associate Professor, Deputy Head of Department of Chemical Engineering, Can Tho University, Vietnam.
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