# Curriculum Vitae

## 1. Name:

TRUONG THANH TUAN

## 2. Education – Degree, Discipline, Institution, Year

| Degree | Field | Institution | Year |
|---|---|---|---|
| Ph.D. | Chemical Engineering | Universiti Teknologi Petronas, Malaysia | November, 2019 |
| M.Sc. | Petrochemical Engineering | HCM University of Technology, Vietnam | April, 2013 |
| B.Sc. | Chemical Engineering | HCM University of Technology, Vietnam | April, 2011 |

## 3. Academic Experience

| Institution | Rank, Title | Year/Period | FT/PT |
|---|---|---|---|
| Petrovietnam University | Manager of External Relations & Science and Technology Department | 2021–Present | FT |
| Petrovietnam University | Lecturer | 2019–Present | FT |

## 4. Non-academic Experience

| Company | Position | Year/Period | FT/PT |
|---|---|---|---|
| Refinery and Petrochemicals Technology Research Center | Process Engineer | 2012–2013 | PT |

## 5. Honors and Awards

• Awarding certificate of merit from PVU Rector 2020-2024

• Awarded a Certificate of Merit by the President & CEO of Petrovietnam (PVN), 2023

## 6. Service Activities

• Examiner for Science and Technology Competition for high school students in Vung Tau city, Vietnam (2019–2024)

• Volunteer in Petronas Process Control Forum, 2017

## 7. Publications and Projects

• T. T. Tuan, H. Zabiri, M. I. A. Mutalib, and D.-V. N. No, "Disturbance-Kalman state for linear offset free MPC," Arch. Control Sci., pp. 153–173, 2022, doi: 10.24425/acs.2022.140869

• Tuan TT, Tufa LD, Mutalib MI, Abdallah AF. Control of Depropanizer in dynamic Hysys simulation using MPC in Matlab-Simulink. Procedia Engineering, 2016;148:1104-11.

• Tuan TT, Tufa LD, Matalib MI, Ramli NM. Optimal operation of a process by integrating dynamic economic optimization and model predictive control formulated with empirical model. Archives of Control Sciences, 2018;28.

• Tuan TT, Tufa LD, Mutalib MI, Olakunle KR. An Hysys simulation of a dynamic process using linear offset free MPC with an empirical model. Indian Journal of Science and Technology. 2017;10(7):1-5.

**Projects Chaired:**

• Research on model predictive control with offset-free based on empirical modeling (2020–2021), University-level project, Completed

**Projects Participated:**

• Research on the application of plastic waste conversion technology into liquid fuels and olefins or syngas (2023–2024), PVN S&T Mission (funded by Vietnam Oil and Gas Group – Petrovietnam), Completed

• Research and fabrication of superhydrophobic and superoleophilic foam for oily wastewater treatment (2022–2024), PVN S&T Mission, Completed

• Research on the fabrication of membranes for hydrocarbon vapor recovery at petrol stations in Vietnam (2021–2023), PVN S&T Mission, Completed

• Study on the application of $CO_2$ separation technology from coal-fired power plant emissions and GHG reduction potential (2023–2025), PVN S&T Mission, Completed

• Updated study on batteries, EV charging stations, and assessment of hydrogen impact on PVOIL business operations (2023), Consulting service contract, Completed

• Carbon Neutral LNG Study in Vietnam (2023–2024), Contract with SK E&S Co., Ltd, Completed

• Development of training modules for PVN headquarters' job positions (Phase 1) (2020–2021), PVN S&T Mission, Completed

• Research on the fabrication of a robot for detecting corrosion in cylindrical floating roof gasoline tanks (2023–2024), PVN S&T Mission, Completed

## 8. Keynote and Invited Speaker Engagements

• Keynote Speaker, 35th International Symposium on Chemical Engineering (ISChE2024), Okinawa, Japan – "Application of Simulation and Metaheuristic Optimization for Oil & Gas Processing Improvement", November 2024

## 9. Areas of Expertise

• Process modeling and simulation (steady state & dynamic) using Aspen HYSYS

• Model Predictive Control (MPC), Soft sensors, System identification

• Metaheuristic optimization (GA, PSO) integrated with MATLAB

• Decarbonization technologies ($CO_2$ capture, Hydrogen)

• Digital transformation in oil & gas operations

## 10. Research Interests

My research focuses on advanced control and optimization for oil & gas and energy systems, with applications in hydrogen production, LNG regasification, refinery optimization, and CCUS. I also explore the integration of AI techniques in simulation and digital twin development for sustainable energy systems.

## 11. Grants and Funding Acquisition

• Principal Investigator, University-funded project on model predictive control (2020–2021)

• Co-researcher in over 8 R&D projects funded by the Vietnam Oil and Gas Group (PVN) in the fields of CCUS, waste-to-energy, membrane separation, and clean fuel production.