

Vahid Taghikhani, PhD

Department of Physics and Engineering, University of St. Thomas, Houston, TX, USA

Academic Profiles

- [Google Scholar Citations and h-Index](#)
- [ORCID ID](#)
- [Research Gate](#)
- [LinkedIn](#)

Past and Current Professional Appointments

- Associate Professor, Department of Physics and Engineering, University of St. Thomas
- Chair, Department of Physics and Engineering, University of St. Thomas
- Faculty Champion, Texas Work-Based Learning Consortium (CIC)
- Chair, Physics and Engineering Department ABET Committee
- Chair, Physics and Engineering Department Safety Committee
- Advisor, McNair Center for Entrepreneurship
- Faculty Development Committee Member (Faculty Senate)
- SPE Professional Mentor
- Energy Mentor, Texas Exchange for Energy & Climate Entrepreneurship
- AIChE South Texas Section Mentor
- Adjunct Professor, Rice University
- Invited Lecturer, University of Houston
- Senior Flow Assurance Advisor, Microsilicon Company
- Assistant Professor, University of St. Thomas
- Research Collaborator & Lecturer, University of Oklahoma
- Research Collaborator, UCLA
- Chemical and Petroleum Engineering Undergraduate Program Director

Education

- PhD, Chemical Engineering – Amirkabir University of Technology (1998) (Collaborative research with McGill University, Canada)
- MSc, Chemical Engineering – Amirkabir University of Technology (1995)
- BSc, Chemical Engineering – Amirkabir University of Technology (1993)

Research Interests

Multiphase flow, flow assurance, asphaltene behavior, gas hydrates, wax/scale/corrosion, hydrogen production & storage, CO₂ sequestration, sensor technologies, and energy systems modeling.

Teaching Experience

Graduate Courses

- Natural Gas Engineering
- Phase Behavior & Flow Assurance
- Advanced Thermodynamics & Heat Transfer
- Computational Methods in Chemical Engineering

Undergraduate Courses

- Chemical Engineering Thermodynamics
- Transport Phenomena & Multiphase Flow
- Engineering Design & Capstone Projects
- Material & Energy Balances
- MATLAB Applications in Engineering
- Unit Operations Laboratory

Teaching & Research Labs Established

- Unit Operations Labs (I & II)
- Electrical Machine Lab
- Simulation & Computational Lab
- Pilot Chemical Engineering Lab
- Mechanical Engineering Research Lab
- PVT Teaching & Research Labs
- Enhanced Oil Recovery (EOR) Lab

Selected Publications (120+ Journal Articles)

- Hydrogel systems for sand control in reservoirs, *Journal of Petroleum* (2025)
- Asphaltene–surface interactions, *Scientific Reports* (2025)
- Sustainable hydrogen from flare gas, *Energy* (2024)
- Ionic liquid systems for enhanced oil recovery, *Journal of Molecular Liquids* (2024)
- CO₂ utilization and energy transition studies, *Renewable & Sustainable Energy Reviews* (2025)
- Microgel systems for high salinity reservoirs, *Journal of Polymer Advanced Technology* (2024)
- Nanoparticle-enhanced oil recovery systems, *Geoenergy Science & Engineering* (2024)
- Fundamental asphaltene characterization studies, *Fuel* (2022)
- CO₂ solubility and thermodynamic modeling, *Fluid Phase Equilibria* (2015)
- Hydrate formation and gas storage systems, *Journal of Chemical Thermodynamics* (2013–2014)

Conference Presentations (Selected)

- AIChE Annual Meeting (2024–2026): CO₂ capture & reaction engineering
- World Chemical Engineering Congress (2024): Flow assurance technologies

- SPE & EAGE Conferences: Asphaltene deposition modeling & simulation
- International Gas Hydrates Conference (ICGH 2011): Hydrate systems
- Multiple AIChE Spring Meetings (2011–2024)

Invited Plenary Talks

- University of Michigan, USC, Rice University, University of Houston
- Texas Tech University, University of Wyoming
- Delft University of Technology, École Polytechnique de Montréal
- AIChE Global Congress (2024)

Professional Memberships

- American Institute of Chemical Engineers (AIChE)
- Society of Petroleum Engineers (SPE)
- AIChE International Committee Member
- Asia-Pacific Confederation of Chemical Engineering (APCCChE)
- Executive Member, WCEC

Honors & Awards

- SPE Technical Editorial Award (2016)
- Young Distinguished Professor Award (IACChE, 2009)
- Visiting Professor, Colorado School of Mines
- Multiple British Council ESRV Awards (2004–2006)
- IDB Bank Merit Scholarship (2006)

Industry & Training

- ABET Quality Assurance Workshops (2025–2026)
- PVTsim Professional Training (Calsep)
- Industrial training in PVT analysis, gas chromatography, lab safety, Texas Oil Tech Lab., Houston, Texas.

Service & Editorial Activities

- Editor-in-Chief, Journal of Chemical Engineering, IJChE
- Reviewer for 15+ journals (Elsevier, ACS, SPE, etc.)
- AIChE and SPE mentoring programs
- International research collaboration network across USA, Canada, Europe, and Asia