

YU WEI

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WORK EXPERIENCE

Nanomechanical Lab, Norwegian University of Science and Technology 1/2025-present

Position title: Post-doctoral researcher

University of Alberta 10/2024-1/2025

Position title: Casual research assistant

Center for Hydrate Research, Colorado School of Mines 10/2023-10/2024

Position title: Post-doctoral fellow (Supervisor: Dr. Carolyn Koh)

Job description: Hydrate formation thermodynamics/kinetics, gas capture & storage, hydrate slurry rheology, flow assurance

EDUCATION

University of Alberta 09/2019-08/2023

Major: Petroleum Engineering (Supervisor: Dr. Nobuo Maeda) **Degree:** Doctor of Philosophy

Overall GPA: 3.8/4.0

Thesis: Experimental Investigation on Interfacial and Surface Phenomena of Clathrate and Semi-clathrate Hydrates

Courses:

Advanced Reservoir Simulation	Grade: A-
Advanced Topics in Petroleum Engineering (Petroleum Geomechanics)	Grade: A
Advanced Topics in Petroleum Engineering (Flow Assurance)	Grade: B+
Advanced Reservoir Engineering	Grade: CR (no letter grade due to COVID)
Advanced Drilling Engineering	Grade: CR (no letter grade due to COVID)
Advanced Topics in Petroleum Engineering (Thermodynamics)	Grade: CR (no letter grade due to COVID)
Advanced Production Engineering	Grade: A+
Advanced Topics in Chemical/Material Engineering (Soft matter & Interfaces)	Grade: A

China University of Geosciences (Beijing) 09/2016-06/2019

Major: Geological Engineering **Degree:** Master of Engineering **Overall GPA:** 3.44/4.0

China University of Geosciences (Beijing) 09/2012-06/2016

Major: Prospecting Technology and Engineering **Degree:** Bachelor of Engineering **Overall GPA:** 3.2/4.0

PUBLICATIONS

- **Yu Wei**, Carolyn Koh* et al. Natural Gas Storage in Hydrates in the Presence of Thermodynamic Hydrate Promoters: Review and Experimental Investigation [J]. *Fluid Phase Equilibria*, 2024: 114286. DOI: [10.1016/j.fluid.2024.114286](https://doi.org/10.1016/j.fluid.2024.114286)
- **Yu Wei**, Nobuo Maeda*. Kinetic promotion of gas hydrate formations using dispersions[J]. *Chemical Engineering Science*, 2023: 119673. DOI: [10.1016/j.ces.2023.119673](https://doi.org/10.1016/j.ces.2023.119673)

- **Yu Wei**, Nobuo Maeda*. Dry Water as a Promoter for Gas Hydrate Formation: A Review[J]. *Molecules*, 2023, 28(9): 3731. DOI: [10.3390/molecules28093731](https://doi.org/10.3390/molecules28093731)
- **Yu Wei**, Nobuo Maeda*. Nucleation Curves of Carbon Dioxide Hydrate in the Absence of a Solid Wall[J]. *Energy & Fuels*, 2023, 37(5): 3760-3774. DOI: [10.1021/acs.energyfuels.2c04301](https://doi.org/10.1021/acs.energyfuels.2c04301)
- **Yu Wei**, Nobuo Maeda*. Mechanisms of the Memory Effect of Clathrate Hydrates[J]. *Chemical Engineering Science*, 2023, 270: 118538. DOI: [10.1016/j.ces.2023.118538](https://doi.org/10.1016/j.ces.2023.118538)
- **Yu Wei**, Qimeng Yang, Xuehua Zhang, Nobuo Maeda*. Critical Shear Stress of Clathrate and Semiclathrate Hydrates on Solid Substrates[J]. *Energy & Fuels*, 2022, 36(7): 3619-3627. DOI: [10.1021/acs.energyfuels.2c00249](https://doi.org/10.1021/acs.energyfuels.2c00249)
- **Yu Wei**, Nobuo Maeda*. Critical Surface Tension and Specific Surface Free Energy of Clathrate Hydrate[J]. *Energy & Fuels*, 2021, 36(1): 407-414. DOI: [10.1021/acs.energyfuels.1c03795](https://doi.org/10.1021/acs.energyfuels.1c03795)
- **Yu Wei**, Long Bai, Xiaonan Wang*. Key Drilling Fluid Technology for Well Chuanshen-1[J]. *Drilling Fluid & Completion Fluid*, 2019, 36(2): 194-201. DOI: [10.3969/j.issn.1001-5620.2019.02.011](https://doi.org/10.3969/j.issn.1001-5620.2019.02.011)
- **Yu Wei**, Xiaonan Wang*, Yuxiu An, Yuan Li. Research Development of Drilling Fluid Lubricant[J]. *Oilfield Chemistry*, 2017, 34(4): 727-733. DOI: [10.19346/j.cnki.1000-4092.2017.04.031](https://doi.org/10.19346/j.cnki.1000-4092.2017.04.031)
- Xin Zhang, **Yu Wei**, Nobuo Maeda*. Ice nucleation in the presence of nucleation promoters dispersed in tetrabutylammonium bromide (TBAB) solutions[J]. *Chemical Engineering Science*, 2024: 119746. DOI: [10.1016/j.ces.2024.119746](https://doi.org/10.1016/j.ces.2024.119746)
- Ying Zhou, Zhuo Chen, **Yu Wei**, Nobuo Maeda, Huazhou Li*. Experimental Measurements and Thermodynamic Modeling of Dissociation Pressure of CO₂ Hydrate in Sulfate Solutions[J]. *Chemical Engineering Science*, 2024: 120823. DOI: [10.1016/j.ces.2024.120823](https://doi.org/10.1016/j.ces.2024.120823)

RESEARCH PROJECTS

Solidified natural gas methane emissions capture and conversion	10/2023-10/2024
Rheology of under-inhibited hydrate slurry system	01/2024-10/2024
Non-plugging behavior evaluation of crude oils	10/2023-10/2024
CO ₂ absorption by nano-emulsions/nanofluids	10/2023-10/2024
Mechanism of the memory effect of clathrate hydrate	05/2022-01/2023
Study on nucleation kinetics of CO ₂ clathrate hydrate	11/2021-05/2022
Adhesive strength between clathrate/semi-clathrate hydrates and substrates	02/2021-10/2021
Determination of specific surface free energy of clathrate hydrate	06/2020-01/2021
Scaling mechanism and control method of drill pipe in wireline coring	01/2018-06/2019
Joint research and demonstration of key technology and equipment of core drilling of polymetallic ore	12/2017-06/2019
Study on properties of plugging gel	08/2016-12/2017
Evaluation of extreme pressure lubricants	03/2015-05/2016

RESEARCH INTERESTS

- Gas hydrate nucleation & crystal growth & agglomeration (kinetics)
- Energy storage
- Thermodynamics
- Carbon capture, utilization & storage (CCUS)
- Gas hydrate surface & interfacial properties (wettability, adhesion)
- Hydrate-related flow assurance (rheology)

ACADEMIC AFFILIATIONS

- SPE membership
- Guest editor for *Molecules*; Reviewer for *Chemical Engineering Journal*, *ACS Sustainable Chemistry & Engineering*, *Fuel*, *Energy & Fuels*, *Journal of Chemical & Engineering Data*, *ACS Omega*, *SPE Journal*

TEACHING EXPERIENCES

- U of A PET E 275 Petroleum Reservoir Fluids Role: Lab instructor & Teaching Assistant
- U of A ENG G 130 Engineering Mechanics Role: Guest lecturer & Teaching Assistant
- U of A PET E 484 Oil and Gas Property Evaluation Role: Teaching Assistant
- U of A CIV E 251 Survey School Role: Teaching Assistant

HONORS & AWARDS

Name	Year
Alberta Graduate Excellence Scholarship	2022
Early Career Researcher Award	2019
Ph.D Recruitment Scholarship	2019
CSC Scholarship Recipient	2019
Postgraduate A-level Academic Scholarship	2016& 2017& 2018
Outstanding Graduate	2016
National Encouragement Scholarship	2015
Candidates Exempt from Master Admission Exam	2015
Professional scholarship	2013 & 2014 & 2015 & 2016
Second prize of college students' innovation and entrepreneurship training plan	2016

PROFESSIONAL SKILLS

High-pressure rheometer, High-pressure autoclave, Differential scanning calorimetry (DSC),

Thermodynamic modeling (CSMGem, PVTsim and Multiflash), High-pressure rocking cell, High-pressure micro-mechanical force apparatus (HP-MMF), Contact angle meter, Preparation of nano-dispersed system, High-pressure automated lag time apparatus (HP-ALTA), Tensiometer, Optical microscopy, Brookfield, Saybolt, Rolling ball, Cannon Fenske viscometer, Raman spectroscopy

RELATED LINKS

Google Scholar: <https://scholar.google.com/citations?user=dIwsfE4AAAAJ&hl=zh-CN&oi=ao>

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