RÉSUMÉ – BAEHYUN MIN, Ph.D.

Associate Professor at Ewha Womans University, Seoul, Republic of Korea · 82-2-3277-6946 · bhmin01@ewha.ac.kr

EDUCATION

Seoul National University, Seoul, Republic of Korea

Ph.D. in Petroleum Engineering — Feb 26, 2013

- GPA: 4.05 / 4.30

M.S. in Civil, Urban, and Geosystems Engineering — Feb 26, 2007

- GPA: 4.12 / 4.30

B.S. in Civil, Urban, and Geosystems Engineering — Feb 25, 2005

- GPA: 4.01 / 4.30 (*summa cum laude*)

RESEARCH INTERESTS

- Reservoir Characterization, Production Optimization & Uncertainty Quantification
- Improved/Enhanced Oil Recovery (IOR/EOR) in Conventional & Unconventional Resources
- Blue Hydrogen with Carbon Capture, Utilization & Storage (CCUS)
- Big Data Analytics, Top-Down Modeling, Data Assimilation & Evolutionary Optimization
- ESG and Sustainable Energy System

WORK EXPERIENCE

Ewha Womans University, Seoul, Republic of Korea

Department Head	Department of Climate and Energy Systems Engineering	Aug 2023 – July 2024 Aug 2020 – Aug 2021
Associate Dean	HOKMA College of General Education	Aug 2021 – Jul 2023
Associate Professor	Department of Climate and Energy Systems Engineering	Mar 2021 – Present
	Department of Social Economy	Mar 2021 – Present
Assistant Professor	Department of Climate and Energy Systems Engineering	Mar 2017 – Feb 2021
	Department of Social Economy	Sep 2019 – Feb 2021

- Petroleum Engineering & Carbon Capture, Utilization, and Storage
- Big Data Analytics Using Artificial Intelligence

Associate Professor — Department of Social Economy — Sep 2019 – Present

- Social Value and Acceptance Coping with Climate Change and Energy Transition

The University of Texas at Austin, Austin, Texas, USA

Research Associate — Center for Subsurface Modeling, under Mary F. Wheeler, Ph.D. (mfw@ices.utexas.edu) — Sep 2016 – Feb 2017

- Simulate and avoid CO_2 leakage at a geological carbon capture and storage field
- Integrate coupled flow-geomechanics simulators with global- and multi-objective optimization algorithms

Postdoctoral Fellow — Center for Petroleum and Geosystems Engineering, under Sanjay Srinivasan, Ph.D. (sanjays@psu.edu) — Jan 2014 – Aug 2016

- Extended the model selection framework with multi-objective optimization based on Pareto-optimality
- Designed a semi-analytical model of thermal injection at heavy oil reservoirs and coupled the model with an evolutionary multi-objective optimization algorithm for unbiased uncertainty quantification

Seoul National University, Seoul, Republic of Korea

Research Associate — Research Institute of Energy and Resources, under Joe M. Kang, Ph.D. (jmkang@snu.ac.kr) — Jun 2013 – Jan 2014

- Built a reservoir management software used for history-matching and production optimization
- History-matched field production of heavy oil and oil sands reservoirs located in Athabasca, Canada
- Developed an advanced evolutionary multi-objective optimization algorithm

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Researcher Research Institute of Energy and Resources, under Joe M. Kang, Ph.D. (jmkang@snu.ac.kr) Jun 2010 – May 2013

- Optimized well locations using artificial neural networks
- Assisted production optimization of gas fields using genetic algorithm coupled with neural networks

SKILLS

- Expert in IMEX, GEM, & STARS of Computer Modelling Group (CMG)
- Expert in MEPO Multiple Realization Optimizer & ECLIPSE of SLB
- Proficient in PETREL of SLB
- Proficient to SGeMS of Stanford University
- Proficient in C/C++ & MATLAB

ACHIEVEMENTS

- 63 Journal Publications & 123 Conference Papers, Talks, or Posters — As of Nov., 2025
- 1 Book: 2050 Hydrogen Energy — Dec 2021
- 1 Software on History Matching of Oil and Gas Fields, Republic of Korea Program Name: Integrated Reservoir Management System — Dec 2015
- 4 Patents on the Development of an Optimization Algorithm, Republic of Korea — As of Nov., 2025

AWARDS

- 16th Early Career Engineer Award, Korean Society of Mineral and Energy Resources Engineers (KSMER) — May 2022
- 2022 Research Excellence Faculty Award, Ewha Womans University (EWU) — Mar 2022
- SPE Technical Reviewer Outstanding Service Award, Society of Petroleum Engineers (SPE) — Sep 2021
- Best Paper Award, the Korean Society of Mineral and Energy Resources Engineers — Nov 2019
- Basic Science Research Program through the National Research Foundation of Korea (NRF) funded by the Ministry of Education, Science and Technology (2016012796)) — Sep 2016
- Best Paper Award, Symposium of Overseas Energy & Mineral Resources Development, Energy & Mineral Resources Development Association of Korea — Aug 2008

SOCIETIES & HONORARIS

- Member, American Geophysical Union (AGU) — Since 2015
- Lifetime Member, International Association for Mathematical Geosciences (IAMG) — Since 2019
- Member, Korean Institute of Gas (KIGAS) / Director (2020-2021) — Since 2018
- Lifetime Member, Korean Society of Mineral and Energy Resources Engineers (KSMER) — Since 2017
- Lifetime Member, Korean Society of Petroleum Engineers (KSPE) / Editor in Chief (2023-Present) — Since 2019
- Member, Society for Industrial and Applied Mathematics (SIAM) — Since 2015
- Member, Society of Petroleum Engineers (SPE) — Since 2005

JOURNALS & CONFERENCE REFEREED

- Reviewer, SPE Reservoir Evaluation & Engineering
- Reviewer, Computational Geosciences
- Reviewer, Computers and Fluids
- Reviewer, Energy Exploration & Exploitation
- Reviewer, International Conference on Ocean, Offshore & Arctic Engineering
- Reviewer, Journal of Petroleum Science and Engineering
- Reviewer, Mathematical Geosciences
- Reviewer, MDPI (e.g., Energies, Water, Sustainability, Colloids and Interfaces)
- Reviewer, Petroleum