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

Associate Dean	HOKMA College of General Education	Aug 2021 – Present
Department Head	Department of Climate and Energy Systems Engineering	Aug 2020 – Aug 2021
Associate Professor	Department of Climate and Energy Systems Engineering	Mar 2021 – Present
Assistant Professor	Department of Climate and Energy Systems Engineering	Mar 2017 – 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, Jun 2010 – May 2013
under Joe M. Kang, Ph.D. (jmkang@snu.ac.kr)

- 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 Schlumberger
- Proficient in PETREL of Schlumberger
- Proficient to SGeMS of Stanford University
- Proficient in C/C++ & MATLAB

ACHIEVEMENTS

- 47 Journal Publications & 91 Conference Papers, Talks, or Posters — As of Jan., 2023
- 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 Jan., 2023

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, Korea Society of Petroleum Engineers (KSPE) — 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