第六届数字岩心分析技术国际研讨会
暨 国际多孔介质协会中国分会2023年会

The 6th International Conference on Digital Core Analysis

& the 2023 China InterPore Conference on Porous Media

会议指南

Conference Guide

中国，青岛
Qingdao, China

2023 年 7 月 5 日-7 日
July 5-7, 2023

主办单位：中国石油大学（华东）油气渗流研究中心

国际多孔介质协会中国分会（**China InterPore Chapter**）

联合单位：中国石油大学（华东）油气渗流研究中心

协办单位：青岛腾跃泰合商务服务公司

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数字岩心与纳微渗流

会议赞助：卡尔蔡司（上海）管理有限公司

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Conference Agenda

July 6th, 2023, Thursday (Beijing Time)

Opening Ceremony	Chairman: Yongfei Yang
08:30 -08:50	**Welcome Speech from Prof. Fang Huang** *Director of the Office of International Affairs at UPC* **Conference Introduction from Prof. Jun Yao** *Director of Center of Multiphase Flow in Porous Media at UPC*
08:50 -09:00	**Group Photo**
Session 1	**Chairman: Jun Yao, Guan Qin**
09:00 -09:25	DNA Tracers in Fractured Reservoirs *Roland Horne, Stanford University, USA*
09:25 -09: 50	Real-time Production Optimization for Intelligent Oilfield Based on Machine Learning *Kai Zhang, China University of Petroleum（East China)*
09:50 -10:15	Machine Learning Algorithms for Predicting Breakthrough Curves for Reactive Flow in Porous Media and Application to Parameter Identification *Oleg Iliev, Fraunhofer Institute for Industrial Mathematics, Germany*
10:15 -10:45	Tea break & Discussion & Poster
Session 2	**Chairman: Kai Zhang, Lei Zhang**
10:45 -11:10	Gas Diffusion and Effective Diffusivity through Saturated or Unsaturated Microporous Media *Moran WANG, Tsinghua University*
11:10 -11:35	Multi-scale Modeling and Simulation of Reactive Transport in Subsurface Environments *Xiaofan Yang, Beijing Normal University*
11:35 -12:00	Numerical Modeling and Simulation of Subsurface Reactive Transport Processes at Multiple Length Scales *Guan Qin, University of Houston, USA*
	BUFFET LUNCH--Coffee Buffet Restaurant on the First Floor of Howard Johnson Kangda Plaza Qingdao

Session 3	Chairman: Hossein Hejazi, Ke Xu
14:00 - 14:25	Pore Structure Evolution of Cement and Concrete Induced by CO_2 Carbonation *Liwei Zhang, Institute of Rock and Soil Mechanics Chinese Academy of Sciences*
14:25 - 14:50	Experimental Study of Shale Porosity and Permeability *Zhejun Pan, Northeast Petroleum University*
14:50 -15:15	Pore-scale Simulations of Forced Imbibition in Natural Rocks *Jianchao Cai, China University of Petroleum (Beijing)*
15:15 -15:40	Nanofluidics: A Window into Fluid Phase and Transport Behaviors at Nanoscale *Junjie Zhong, China University of Petroleum (East China)*
15:40 - 16:00	**Tea break & Discussion & Poster**
Session 4	**Chairman: Jianchao Cai, Junjie Zhong**
16:00 -16:25	Current Status and Prospect of CCUS Technology *Zhenhua Rui, China University of Petroleum (Beijing)*
16:25- 16:50	Trapped Ganglia in Porous Media: Thermodynamics, Ripening, Kick-off and Governing Scales *Ke Xu, Peking University*
16:50 -17:15	Corner Flow Development in Porous Media *Hossein Hejazi, University of Calgary, Canada*
17:15-17:40	Pore-scale Dynamic 3D Imaging of CO_2 Trapping Based on X-ray Micro-tomography *Yongfei Yang, China University of Petroleum (East China)*
	Gala Dinner, Howard Johnson Hall 2 on the fourth floor of Howard Johnson Kangda Plaza Qingdao

July 7th, 2023, Friday (Beijing Time)

Session 5	Chairman: Xiaolong Yin, Lele Liu
08:30 -08:55	Kinetic Modeling of Evaporating Flows in Nano-pores *Yonghao Zhang, Institute of Mechanics, Chinese Academy of Sciences*
08:55 -09:20	Application of Volume Translation in Cubic EOS and PC-SAFT EOS *Huazhou Li, University of Alberta, Canada*
09:20 -09:45	An Adaptive High-Dimensional Fuzzy System with Simultaneous Feature Selection and Rule Extraction *Jian Wang, China University of Petroleum (East China)*
09:45-10:10	Pore-scale Study of Multiphase Reactive Flow with Solid Dissolution in Porous Media *Li Chen, Xi'an Jiaotong University*
10:10 -10:30	**Tea break & Discussion & Poster**
Session 6	**Chairman: Huazhou Li, Li Chen**
10:30- 10:55	Porous Media in the Environment-energy-resources Fields: Microscopic Pore Structure and Macroscopic Fluid Flow *Qinhong Hu, China University of Petroleum (East China)*
10:55 -11:20	Visualization of Polymer Induced Permeability Damage in Microfluidic Device and Modeling *Xiaolong Yin, Eastern Institute of Technology, Ningbo*
11:20- 11:45	Pore Fractal Properties of Hydrate-bearing Sediments *Lele Liu, Qingdao Institute of Marine Geology*
	BUFFET LUNCH--Coffee Buffet Restaurant on the First Floor of Howard Johnson Kangda Plaza Qingdao

Session 7	Chairman: Chi Zhang, Wenhui Song
14:00 - 14:25	Digital Rock Typing a Revelation of Artificial Intelligence Geoscience Aided Physics *Omar Alfarisi, Khalifa University, UAE*
14:25 - 14:50	Modeling of Flow and Transport in Multiscale Digital Rocks Aided by Grid Coarsening of Microporosity *Chaozhong Qin, Chongqing University*
14:50 - 15:15	Confinement Effect of Nanopores on Fluid Phase Behavior: Experimental Study and Modeling *Yaoze Cheng, Research Institute of Petroleum Exploration and Development, CNPC*
15:15 -15:40	**Tea break & Discussion & Poster**
Session 8	**Chairman: Chaozhong Qin, Omar Alfarisi**
15:40 -16:05	Pore to Watershed: Unveiling the Critical Zone through Geophysical Applications *Chi Zhang, University of Vienna, Austria*
16:05 - 16:30	Pore-scale Modeling of Fluid Flow in Shale Oil and Gas Reservoir *Wenhui Song, China University of Petroleum (East China)*
16:30 - 16:55	An Energy Stable SPH Method for Fluid-solid Interactions *Xingyu Zhu, King Abdullah University of Science and Technology*
	Closing Ceremony

Profiles of Experts

(In the order of speeches)

Roland Horne

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Roland N. Horne is the Thomas Davis Barrow Professor of Earth Sciences and Professor of Energy Resources Engineering at Stanford University, and Director of the Stanford Geothermal Program. He was formerly the Chairman of the Department of Petroleum Engineering at Stanford from 1995 to 2006. He is best known for his work in well test interpretation, production optimization, and tracer analysis of fractured geothermal reservoirs. So far in his academic career he has supervised the graduate research of 60 PhD and 120 MS students, including about 60 in geothermal topics. He served on the International Geothermal Association (IGA) Board 1998-2001, 2001-2004, and 2007-2010, and was the 2010-2013 President of IGA. He was Technical Program Chairman of the World Geothermal Congress 2005 in Turkey, 2010 in Bali, Melbourne in 2015, and again in Iceland in 2020-2021.

Roland is a member of the US National Academy of Engineering and an Honorary Member of the Society of Petroleum Engineers. He is also a Fellow of the School of Engineering, University of Tokyo and an Honorary Professor of China University of Petroleum – East China.

Kai Zhang

China University of Petroleum (East China)
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Kai Zhang received the Ph.D. degree in Oil and Gas Development Engineering from China University of Petroleum (East China), in 2008. Since then, he has been a Teacher with China University of Petroleum (East China). In 2010 and 2015, he was promoted as an Associate Professor and as a Full Professor, respectively. He is currently the vice president of Qingdao University of technology, China.

His main research interests include evolutionary computation, machine learning, production optimization, history matching, and development of nonconventional reservoir etc. He has already published more than 230 papers. Prof. Zhang received the Outstanding Youth Science Foundation from the National Natural Science Foundation

of China and serve as the Fluid mechanics Special Committee Member of China Mechanical Society.

Oleg Petkov Iliev

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Senior scientist in Fraunhofer Institute for Industrial Mathematics since 1998. APL Professor, Faculty of Mathematics, RPTU Kaiserslautern, 2011-present. Associate Director, Center Numerical Porous Media, King Abdullah Univ. Sci.&Technology, KAUST, Saudi Arabia, 2012-2016.

Diploma with Honor in Applied Mathematics, Moscow State University, Russia, 1981, PhD in Mathematics and Physics, Moscow State University, Russia, 1987.

President, International Society for Porous Media, 2011-2013, Member of the Executive Committee, International Society for Porous Media, 2009-2015, Chair of the Event Committee, International Society for Porous Media, 2016-present.

Moran WANG

Tsinghua University
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Moran Wang is a Professor of Fluid Mechanics and Thermophysics at Tsinghua University. He obtained Bachelor and PhD degrees from Tsinghua University, and held postdoc positions in Johns Hopkins University and the University of California of USA. He worked at Los Alamos National Laboratory as an Oppenheimer Fellow. He has been a full professor at Tsinghua University since 2011. He is working on micro/nanoscale fluid mechanics in porous media, multiscale modeling, nonlinear heat & mass transfer, and interfacial science. He has authored over 200 peer-reviewed papers on international journals which gained over 12k citations based on Google Scholar Reports (H-index: 55). Prof. Wang has been serving as editorial board members for several international journals including “International Journal of Mechanical Sciences”, “Energy Science and Engineering”, “Journal of Colloids and Interface Science”, “Transport in Porous Media”, “Journal of Porous Media” and so on. He has been invited to contribute comprehensive reviews on “Physics Reports”, “Material Science and Engineering R: Reports”, “Progress in Materials Science” and so on. He was awarded J.R. Oppenheimer Fellowship in 2008, Interpore P&G Award in 2019 and Fellow of IMMS in 2022.

Xiaofan Yang

Beijing Normal University
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Xiaofan Yang is a Professor in Hydrology at the Beijing Normal University (BNU), China. She holds a BEng from Tsinghua University (China), a MSc from KTH (Sweden) and a PhD from Kansas State University (USA). Before joining BNU, she was a Scientist at the Pacific Northwest National Laboratory (PNNL) of the U.S. Department of Energy (US DOE). Her research interests include subsurface hydrology, computational hydrology and multiscale modeling and simulations, with specific focus on reactive transport modeling, groundwater modeling, flow and reactive transport in porous media. She is currently the Vice President of the Terrestrial Working Group of the International Arctic Science Committee, member of the National Chapter Committee of the InterPore, and serves as the Associate Editor of Journal of Hydrology: Regional Studies and Hydrological Processes.

Guan Qin

University of Houston
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Guan Qin currently is professor of petroleum engineering at Department of Petroleum Engineering, Cullen College of Engineering, University of Houston (UH) and he is also the holder of SPE – Gulf Coast Section Distinguish College Professorship. Prior to his current position at UH, he also served various academic positions in University of Wyoming and Texas A&M University.

Guan's research has been focused on application of advanced mathematical and computational methods in modeling subsurface fluid flow processes that involve multi-scale and multi-physics processes. His current research is centered around modeling fluid transport in unconventional reservoirs, gas hydrate format-ion, and reactive-transport process in CCS, which involves molecular, lattice Boltzmann, and finite element/difference simulation at different length scales.

Liwei Zhang

Institute of Rock and Soil Mechanics (IRSM), Chinese Academy of Sciences.
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Liwei Zhang is a professor at Institute of Rock and Soil Mechanics (IRSM), Chinese Academy of Sciences. Prof. Zhang's research has been focused on reactive transport in cementitious materials, risk management of wellbore leakage, development of functional cement additives and mineral dissolution/precipitation processes. Specific research areas include evolution of pore structure in cement exposed to CO_2, development of corrosion-resisting cement additives, carbonation of cement and concrete induced by high pressure CO_2, subsurface mineral dissolution and precipitation under geologic carbon storage conditions, etc. His research activities have resulted in 2 books (as the Editor), 5 book chapters, 19 patents and more than 120 journal articles and conference proceedings. Prof. Zhang is a steering committee member of International Energy Agency Greenhouse Gas R&D Programme (IEAGHG)'s Risk Management Network, a committee member of the Energy and Environment Division of China Energy Society, and a committee member of the Climate Change Division of Chinese Society for Environmental Sciences.

Zhejun Pan

Northeast Petroleum University
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Dr. Zhejun Pan is a professor at Northeast Petroleum University, China, since 2021. He is the Editor-in-Chief of the SCI journal, Gas Science and Engineering. He has worked at CSIRO, Australia from 2004 to 2020 with the final position as a senior principal scientist and team leader of unconventional gas reservoirs. He holds a PhD degree in Chemical Engineering from Oklahoma State University, USA, in 2004.

Dr. Pan's main research interests include unconventional gas reservoirs and CO_2 geological storage. He applies thermodynamics, fluid dynamics, and rock mechanics in modeling fluid flow in porous media. He also designs experimental apparatuses and procedures to study the gas storage and flow behaviors in reservoir rocks.

Dr. Pan has published more than 250 papers with a total citation over 16,000 from Google Scholar. He is one of the Clarivate Highly Cited Researchers in 2021 and 2022. He served as an associated editor (2014-2016) and then an executive editor (2017-2022) for Journal of Natural Gas Science and Engineering.

Jianchao Cai

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Jianchao Cai has focused on the petrophysical characterization and micro-transport phenomena in porous media, and fractal theory and its applications for more than 18 years. He has served as a visiting scholar at University of Tennessee-Knoxville (U.S.A.), and at King Abdullah University of Science and Technology (Saudi Arabia). He currently is a professor of Geological Resources and Geological Engineering at the China University of Petroleum (Beijing). Meanwhile, he is the founder and co-Editor-in-Chief of Advances in Geo-Energy Research and serves as Associate Editor or Editorial member for several international journals. He received an award from the National Science Foundation of China for Outstanding Youth Foundation in 2017, and Energy and Fuels Rising Stars in 2022. He was also named Global Highly Cited Researcher by Clarivate Analytics in 2020 and 2021. He has managed and completed more than 30 projects to date on oil and gas reservoir evaluation and published more than 200 peer-reviewed journal articles, 6 books, and numerous book chapters. The total citations exceed 10000 in Google scholar.

Junjie Zhong

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Prof. Junjie Zhong obtained his B.Eng. degree from the Xi'an Jiaotong University in 2015, followed by his PhD from the University of Toronto in 2018. He is currently a professor at the School of Petroleum Engineering, China University of Petroleum (East China). His academic achievements have been acknowledged through his selection as a recipient of the national young thousand talents program and the distinguished overseas young talents program of Shandong Province. His outstanding work in nanofluidic research, specifically in pushing the boundaries of experimental fluid mechanics and thermodynamics below the sub-10 nm scale, earned him the Rien van Genuchten Early-Career Award (issued by the International Society for Porous Media) and Chinese Government Award for Outstanding Students Abroad.

Zhenhua Rui

China University of Petroleum (Beijing)
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Dr. Zhenhua Rui is a Distinguished Chair Professor at China University of Petroleum, Beijing, and the Changjiang (Yangtze River) Scholar, Associate Dean of Carbon Neutrality Future Technology, and Deputy Director of State Key Laboratory of Petroleum Resources and Prospecting. His research interests include CO_2 capture, enhanced oil recovery (EOR) and sequestration, as well as integration of oil and gas energy exploration and development engineering. He has published over 100 journal papers such as Applied Energy, Engineering, etc. He is the principle investigator (PI) of the National Key Research and Development Program of China, the Center of Introducing Talents of Discipline to Universities ("111" Center) and other national projects. He is serving as a member of the United Nations Resource Management Committee, the host of UNESCO Chair in Green Transition for Carbon Neutrality and Climate Change (first UNESCO Chair in carbon neutrality), and Editor-in-Chief of Journal of Energy Resources Technology, Transactions of the ASME. He received SPE International PF&C Award (the first recipient from Asia), SPE Distinguished Member, and SPE Distinguished Service Award, etc.

Ke Xu

Peking University
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Ke Xu is now a tenure-track assistant professor in Peking University (PKU), and is also serving as the vice dean of PKU department of energy and resources engineering. Xu's research group in PKU is now working on complex fluid behavior in porous media, and relevant applications in subsurface energy & resources engineering such as oil&gas recovery, geological carbon sequestration, hydrogen storage, and lunar resource recovery. Specifically, Xu's group look into pore scale and explore novel strategies to upscale pore-scale physics to Darcy'scale properly, using theoretical, computational and experimental tools.

Recent independent approaches in Xu's group are published in PNAS, PRL, GRL, SPE Journal, AIChE Journal, PR Fluids, etc. Ke Xu is now hosting national grants including National Key Research and Development Program (youth program), NSFC general program, NSFC special program, etc., and also funded by multiple industrial R&D programs.

Hossein Hejazi

University of Calgary
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Dr. Hejazi is a Professor of Chemical and Petroleum Engineering at the University of Calgary. He holds a Bachelor's and Master's degree in Mechanical Engineering, and earned his Ph.D. in Chemical and Petroleum Engineering in 2011. He joined the faculty of the Schulich School of Engineering in 2013, after working in industry on the development of oil recovery techniques from naturally fractured heavy oil reservoirs.

Dr. Hejazi leads the "Interfacial Flows and Porous Media" laboratory at the University of Calgary. His research is focused on interfacial flows, liquid-solid interactions, soft matter, and porous media science, with applications in health, energy, and environmental systems. Dr. Hejazi employs a multidisciplinary approach, utilizing experiments, theory, and simulations to study hydrodynamic instabilities, wetting and evaporation dynamics, reactive flow in porous media, microfluidics and HPHT (High Pressure High Temperature) visual micromodels, multiphase flow in reservoir rocks, enhanced oil production, liquid-cooling of electronics, and the design of novel interfacial materials for 3D printing

Yongfei Yang

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Dr. Yongfei Yang is currently a professor, vice dean of the School of Petroleum Engineering at China University of Petroleum (East China). His research areas are fluid flow in porous media, focusing on pore-scale methods based on digital rock and pore network model, and enhanced oil recovery technology based on x-ray computer tomography. He is an active InterPore member, acting as secretary general of China InterPore Chapter, secretary of InterPore Foundation & Co-chair of InterPore Qingdao Conference. Dr. Yang holds B.Sc., M.Sc. and Ph.D. degrees in Petroleum Engineering from China University of Petroleum (East China).

Yonghao Zhang

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Professor Yonghao Zhang recently joined Institute of Mechanics, Chinese Academy of Sciences. Previously, he held Jason Reese Chair in Multiscale Fluid Mechanics at Edinburgh University, and Weir Professorship in Thermodynamics and Fluid Mechanics at Strathclyde University, both are in Scotland. He was a Royal Academy of Engineering/Leverhulme Trust Senior Research Fellow, and is a Fellow of the Institution of Mechanical Engineers, and a Fellow of the Institute of Physics. He actively promotes multiscale modelling through engagement with policymakers and the broader scientific community, within the UK and internationally, e.g., as Chair of the 31st International Symposium on Rarefied Gas Dynamics, Glasgow, UK, 23-27 July 2018.

Zhang has 25 years' experience in leading research on multiscale gas/liquid/solid systems, focusing on mesoscopic modelling across the boundaries of conventional computational engineering. To date, Zhang has published over130 research articles in leading journals in the fields including Journal of Fluid Mechanics and Journal of Computational Physics; his current h-index is 45, with 6000.

Huazhou Li

University of Alberta
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Huazhou Li is an Associate Professor in Petroleum Engineering at the University of Alberta. The petroleum-engineering courses that he teaches include well completion and stimulation, thermal methods for heavy oil recovery, and advanced production engineering. He conducts research on the development of improved equation-of-state-based models and algorithms for simulating the phase behavior of complex reservoir fluids. He also works on developing novel enhanced oil recovery techniques. He published a book titled "Multiphase Equilibria of Complex Reservoir Fluids". He also co-authored 106 peer-reviewed journal papers and 29 conference papers. He now serves as an associate editor for Geofluids. He received the Regional Distinguished Achievement Award for Petroleum Engineering Faculty from SPE in 2020, the Petro-Canada Young Innovator Award from the University of Alberta in 2018, and the Outstanding Technical Editor Award from SPE Journal in 2016, 2019, and 2021. He is a member of SPE and American Chemical Society (ACS). Li holds a

BSc degree and an MSc degree, both in Petroleum Engineering, from the China University of Petroleum (East China), and a PhD degree in Petroleum Systems Engineering from the University of Regina.

Jian Wang

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Prof. Jian Wang, is currently a Professor and servers as the Head of the Cross-Media Big Data Joint Laboratory with the College of Science, China University of Petroleum (East China), Qingdao, China. In 2012, he received his Ph.D. degree in Computational Mathematics from Dalian University of Technology, China. He was awarded several grants from the National Science Foundation of China, National Key Research and Development Program of China, Natural Science Foundation of Shandong Province, Fundamental Research Funds for the Central Universities. Prof. Wang serves as an Associate Editor for the IEEE Transactions on Neural Networks and Learning Systems (IF: 14.255), International Journal of Machine Learning and Cybernetics (IF: 4.377), Information Sciences (IF: 8.233) and IEEE Transactions on Emerging Topics in Computational Intelligence (IF: 4.851). He also serves on the Editorial Board for the Neural Computing & Applications (IF: 5.102) and Complex & Intelligent Systems (IF: 6.700). In addition, He has served as the General Chair, the Program Chair, and the Co-Program Chair of several conferences such as the International Symposium on New Trends in Computational Intelligence, IEEE Symposium Series on Computational Intelligence and International Symposium on Neural Networks.

Li Chen

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Li Chen is a full Professor at Xi'an Jiaotong University (XJTU) China. He was the winner of Young Scientist Award of Asian Union of Thermal Science and Engineering. His research focuses on transport phenomena in porous media with background of fuel cell, flow battery, CO_2 storage and hydrocarbon resource exploitation. Particularly, he has developed an advanced pore-scale model based on the Lattice Boltzmann Method for coupled multiphase flow, heat and mass transfer, chemical reaction, solid precipitation-dissolution (melting-solidification) processes in

porous media. Up to now, he has published 110 SCI papers in a variety of top journals, including Progress in Energy and Combustion Science, Journal of Power Sources, Applied Energy, Electrochemica Acta, Energy, Chemical Engineering Journal, International Journal of Heat and Mass Transfer, Journal of Computational Physics, Physical Review E, Langmuir, Nano Energy, International Journal of Hydrogen Energy, Fuel, Water Resources Research, etc. Furthermore, his research has also resulted in over 40 conference presentations (including 15 keynote or invited talks), 10 patents and 8 software copyrights. He is in the editor board of two international journals (Frontiers in Heat and Mass Transfer, Energies). He is also in the young editor board of Advances in Applied Energy. He is the associate editor of Frontiers in Thermal Engineering.

Qinhong Hu

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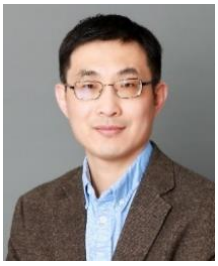
Dr. Qinhong Hu is currently a Chair Professor at China University of Petroleum (East China), after being a Distinguished Professor at the University of Texas at Arlington, where he joined in 2008 after working at Lawrence Berkeley and Livermore National Laboratories from 1997 to 2008, as well as obtaining his PhD degree at the University of Arizona in 1995. He was elected as a Fellow of Geological Society of America (GSA) in 2013 and American Association for the Advancement of Science (AAAS) in 2020, as well as being a winner of the Fulbright Global Scholar Award (2021), University of Texas at Arlington Award for Outstanding Research Achievement (2020), and 20+ other (inter-)national awards. He serves as the Editor-in-Chief for Marine and Petroleum Geology (2017-2025), Associate Editors or Editorial Board Members for five other journals in energy and environmental geosciences. One of his major research foci is the micro-scale pore structure and its emergent effect on macro-scale fluid flow & chemical transport in porous & fractured media, with a particular focus on low-permeability media and fracture-matrix interactions implicated in various energy geosciences (shale gas and tight oil production, high-level nuclear waste geological repository,). He has published 219 SCI journal articles (with 121 over the past 5 years) and 190+ other peer-reviewed technical publications, as Top 2% of the Scientists in the World by Stanford-Elsevier Report (2019-2022), ranked as #2,968 in the world in the area of Earth Science by research.com (2023) and top 2.3% in the World over the last six-year's H-Index by AD Scientific Index (2023). He has mentored a total of 139 postdoctoral, PhD, MS, and undergraduate students, who have won 83 awards and scholarships.



Xiaolong Yin

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Xiaolong Yin is Professor in College of Engineering at the Eastern Institute of Technology, Ningbo. He received BS in Mechanics from Peking University, MS in Mechanical Engineering from Lehigh University, and PhD in Chemical Engineering from Cornell University. Prior to joining EIT, he was the faculty of Petroleum Engineering at the Colorado School of Mines and served as the associate department head from 2019 to 2022. Professor Yin's research area is in porous media flow and multiphase flow. In addition to his research and academic roles, he has also served many roles in the Society of Petroleum Engineers (SPE), including Associate Editor of the SPE Journal and Member of the SPE Reservoir Advisory Committee. He has authored over 70 peer-reviewed articles and over 40 conference papers.

Lele Liu

Qingdao Institute of Marine Geology
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Lele Liu is a professor of the Qingdao Institute of Marine Geology, and his current research interests include hydraulic and mechanical properties of hydrate-bearing sediments as well as multiple processes coupling during natural gas hydrate production. He has authored or co-authored more than 80 journal papers, 3 books, and more than 60 national patents. He has been recognized as a youth talent by the Ministry of Natural Resources and the Government of Shandong Province.

Omar Alfarisi

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Dr. Omar Alfarisi is an Adjunct Professor at the Chinese University of Petroleum and a Guest Professor at the Khalifa University. He has been a Reviewer at the SPE (Society of Petroleum Engineers since 2019, President at the SPWLA (Society of Petrophysicist and Well Log Analysts) Abu Dhabi Chapter 2022-2023. Dr. Alfarisi is an Advisory Board Member of the iRIS 2023 (International Rock Imaging Summit) and Co-Chair of the SPE 2019 Reservoir Characterization and Simulation Modeling Conference. He is a Panelist at the Artificial Intelligence Engineering for Future Energy Mix session at the SPE GOTECH 2023 Conference. Dr. Alfarisi is a 2017-2018 Distinguished Speaker at the SPWLA in Reservoir Rock Typing. Dr. Alfarisi innovated Digital Rock Typing. He has a BSc in Electronics and Telecommunication Engineering from the University of Baghdad, an MSc in Petroleum Engineering from The Petroleum Institute of Khalifa University, an MBA from London Business School, and a Ph.D. in Interdisciplinary Artificial Intelligence Engineering from MIT (Massachusetts Institute of Technology) and Khalifa University. He worked for Fortune 500 Global companies, SLB, and TOTALenergies.

Chaozhong Qin

Chongqing University
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Prof. Qin Chaozhong is from the Department of Carbon Storage Science and Engineering, Faculty of Resources and Safety Engineering, Chongqing University. He obtained his doctoral degree from the Department of Earth Sciences, Utrecht University, The Netherlands in 2013, under the supervision of Prof. Majid Hassanizadeh. He served as the Managing director of the Darcy Research Center at Eindhoven University of Technology from 2016 to 2019. He joined Chongqing University at the end of 2019. Currently, his research interests mainly focus on multiscale flow and transport in porous media and digital rock analysis. He has published over 50 articles in peer-reviewed top journals including Geophysical Research Letters, Water Resources Research, Advances in Water Resources, and Journal of Petroleum Science and Engineering.

Yaoze Cheng

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Yaoze Cheng is a scientific researcher in the Department of Development Laboratory in the Enhanced Oil Recovery (EOR) Research Center at the Research Institute of Petroleum Exploration and Development (RIPED). Cheng has over 10 year's research experience in the areas of EOR, PVT/phase behavior, miscible/immiscible displacement, and smart water studies. Cheng's major research interests include low salinity water flooding (LSWF) EOR, CO_2 EOR, water-alternating-gas (WAG) EOR, phase behavior of conventional and unconventional resources, determination of reservoir fluid properties, and solvents processes for heavy oil recovery. His research activities are currently focused on two areas: shale and ultra-deep reservoir resources and CCUS-EOR/EGR. Cheng is an active member of SPE.

Chi Zhang

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Dr. Chi Zhang is a dedicated hydrogeophysicist with a strong focus on complex fluid-rock interactions, utilizing advanced tools such as geoelectrics, nuclear magnetic resonance, and modeling techniques. She is currently serving as a tenure-track assistant professor at the University of Vienna where she leads the Environmental Geophysics group. This position builds upon her valuable experience as an Assistant Professor in the Department of Geology at The University of Kansas, US.

Dr. Zhang's research delves into the intricate interplay among physical, chemical, and biological processes that influence the behavior of geologic media and their constituent fluids—including water, brine, CO_2, and hydrocarbons. She approaches these challenges at multiple scales, from the micro to the macro, emphasizing their interconnected nature.

Currently, Dr. Zhang is conducting insightful research on water distribution, weathering, and geochemical fluxes in carbonate rocks. With a solid track record of scholarly contributions, Dr. Zhang has a series of papers published in respected journals such as Geophysics, Journal of Geophysical Research, Water Resources

Research, Geophysical Research Letter, and Environmental Science and Technology as first or corresponding author.

Wenhui Song

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Dr. Song is associate professor in School of Petroleum Engineering, China University of Petroleum (East China). He obtained PhD degree in 2020 at China University of Petroleum (East China) and has published 50+ journal papers (H-index 20). He visited the University of Texas at Austin, Heriot-Watt University, and University of New South of Wales in 2018, 2015 and 2014. He is currently the Early Career Editorial Board and Guest editor of 10+ academic journals.

Xingyu Zhu

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Xingyu Zhu is a PhD candidate at the Computational Transport Phenomena Laboratory in the Division of Physical Science and Engineering at King Abdullah University of Science and Technology. He is advised by Prof. Shuyu Sun. Xingyu's research focuses on particle-based numerical methods, specifically Smoothed Particle Hydrodynamics (SPH). He focus on the design and implement of energy stable SPH methods and their application to fluid flow in porous media.

He also conducts research on physical preserving IMPES methods, which address saturation distribution issues at the Darcy scale. Xingyu has expertise in Hamiltonian and thermodynamical coupling methods as well.

Before his PhD program, Xingyu obtained a Master's degree in Reservoir E ngineering from China University of Petroleum. During this time, he specialized in Digital Rock Physics (DRP) and programming. He integrated DRP with rese rvoir properties optimization, numerical simulation, image processing, reservoir c haracterization, and modeling. His research involved developing advanced statisti cal models using MCMC to generate multi-mineral component digital rocks. He also utilized image processing techniques to analyze CT images.

Xingyu has further research experience as a visiting student at Heriot-Watt University, where he focused on pore-morphology-based simulation in porous m edia. He used pore-network modeling and the Lattice Boltzmann Method (LBM) to gain insights into fluid behavior at the microscopic level

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