



INSTRUCTIONAL RESEARCH STAFF

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LANGUAGES
English
Chinese

Chuan Lu

PROFESSIONAL RESEARCH INTERESTS AND EXPERTISE –

- Carbon Sequestration
- High performance computing in geoscience
- In-situ combustion for enhanced oil recovery
- Multiphase reactive flow in porous media

EDUCATION –

- 1995 B.S. in Chemical Engineering, Tianjin University, Tianjin, P.R. China
- 1998 M.S. in Chemical Engineering, Tianjin University, Tianjin, P.R. China
- 2003 Ph.D. in Chemical Engineering, University of Southern California

MEMBERSHIPS –

- AIChE
- SPE

PUBLICATIONS –

- Lu, C., and Yortsos, Y.C., Dynamics of Forward Filtration Combustion at the Pore-Network Level, AIChEJ, 51(4), 1279 (2005)
- Lu, C., and Yortsos, Y.C., Pattern Formation in Reverse Filtration Combustion, Phys.Rev.E 72, 036201 (2005).
- Lu, C., and Yortsos, Y.C., Percolation Phenomena in Filtration Combustion, Ind. Eng. Chem. Res., 43, 3008 (2004).

PRESENTATIONS –

- Hammond, G., P. Lichtner, and C. Lu (2007) Subsurface multiphase flow and multicomponent reactive transport modeling using high-performance computing, *J. Phys.: Conf. Ser.*, 78, doi:10.1088/1742-6596/78/1/012025.
- Lu, C. and P. C. Lichtner (2007) High resolution numerical investigation on the effect of convective instability on long term CO₂ storage in saline aquifers, *J. Phys.: Conf. Ser.*, 78, doi:10.1088/1742-6596/78/1/012042
- Lichtner, P. C. Lu, C., Development of the Massively Parallel Computer Model PFLOTRAN with Application to CO₂ Sequestration, paper presented at SIAM Conference on Mathematical and Computational Issues in the Geosciences (March 19, 2007, Santa Fe)
- Lichtner, P. C. Lu, C., Numerical Investigation of CO₂ Sequestration in Geologic Media Using the Massively Parallel Computer Code PFLOTRAN, paper presented at the Computational Methods in Water Resources – XVI Meeting (June 19, 2006, Copenhagen, Denmark)
- Lu, C., Lichtner, P. C. and Tsimpanogiannis, I.N., Parametric Study of CO₂ Sequestration in Geologic Media Using the Massively Parallel Computer Code PFLOTRAN, abstract submitted, paper presented at the 2005 AGU Fall Meeting (December 5-9, San Francisco)
- Akkutlu, IY; Lu, C.; Yortsos, YC, Insights into In-situ Combustion by Analytical and Pore-network Modeling, paper presented in SPE/PS-CIM/CHOA International Thermal Operations and Heavy Oil Symposium Proceedings, 2005; v.2005, p.B397-B411
- Lu, C. and Lichtner, P.C., PFLOTRAN: Massively Parallel 3-D Simulator for CO₂ Sequestration in Geologic Media, paper presented at the Fourth Annual Conference on Carbon Capture & Sequestration Alexandria, Virginia (May 2-5, 2005)
- Lu, C., Kechagia, P., Yortsos, Y. C., and Lichtner, P., Non-Local Upscaling of Reaction-Transport in Porous Media Using a Hybrid Algorithm, paper presented at the AIChE Fall Meeting, Reno, NV (November 5-8, 2001).
- Lu, C., and Yortsos, Y.C., A Pore-Network Model of Combustion in Porous Media, paper SPE 69705 presented at the International Thermal Operations and Heavy Oil Symposium (ITOHOS), Margarita Island, Venezuela (March 12-14, 2001).
- Lu, C., and Yortsos, Y. C., A Pore-Network Model of Smoldering Combustion, paper presented at the AIChE Fall Meeting, Los Angeles, CA (November 12-17, 2000).
- Lu, C. and Yortsos, Y.C., The Dynamics of Combustion in Porous Media at the Pore-Network Scale, paper presented at the 7th European Conference on the Mathematics of Oil Recovery, Baveno, Lago Maggiore, Italy (Sept. 5-8, 2000).