

Jincai Chang

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QUALIFICATIONS:

- More than 25 years of reservoir simulator development and simulation consulting practice
- Profound understanding of mathematics, reservoir engineering, optimization, economics and computer programming
- Expertise and hands-on experience in simulation software development and customer support
- Extensive experience in training oil and gas field engineers from various countries
- Skills to work with people at different academic levels and backgrounds
- Fluent in English and Chinese

EXPERIENCE:

Aug 2015 --- Present

- Associate Professor of Engineering Practice, Petroleum Engineering, University of Southern California

Jan 2012 --- May 2015:

- Part-time Lecturer, Petroleum Engineering, University of Southern California
- May 2005-present: Maraco, Inc., Dana Point, CA

Senior Reservoir Engineer, Petroleum Consultant, Vice President in Software Development

- Developing and maintaining **GasPal**, a fully integrated gas reservoir simulator. Current users of GasPal: TOTAL Exploration and Production Indonesia (TEPI), TOTAL Exploration and Production Netherlands (TEPN), Dutch government agency (EBN), Saudi Aramco, Japan INPEX, Thailand PTT Exploration and Production (PTTEP, which has been evaluating **GasPal**).
- Developed a proprietary algorithm to solve fluid flows in surface network with *loops and branches*, the selling point of GasPal simulator
- Devised a special algorithm in tubing calibration

May 1995-present:

- Developed large scale software, "Strategic Planning Model" (**SPM**) for Kuwait Oil Company. **SPM** has been extensively used by KOC for its long term production and optimization studies.
- Developed software "Gas Storage Optimization" (**GASTOP**), which was used by Southern California Gas Company for modeling its storage reservoirs.
- Developed software "Saudi Aramco Hydrocarbon Resource Analysis" (**SAHRA**) for Saudi Aramco.
- Conducted numerous training courses for engineers of the following companies:
 - Kuwait Oil Company (KOC), Kuwait
 - TOTAL Exploration and Production, Indonesia (TEPI)
 - Dutch government agency in charge of mineral management (EBN), Netherlands
 - TOTAL Exploration and Production, Netherlands
 - TOTAL Exploration and Production, headquarter in Pau, France
 - PTT Exploration and Production, Thailand
 - INPEX, Japan

August 1991 – May 1994

- Post-Doctoral Research Associate, University of Southern California
 - Researched in reservoir simulation, linear programming and network for optimization, and economic analysis.
 - Developed software "Field Development Optimization System (**FIDOS**)" by combining simulation, economic analysis, and optimization. FIDOS was a long term planning tool for gas reservoirs.

EDUCATION:

1991 **Ph.D.** **University of Southern California**, Petroleum Engineering, Los Angeles, California
1986 **M.S.** **University of Southern California**, Petroleum Engineering, Los Angeles, California
1982 **B.S.** **Southwestern China Petroleum Institute**, Reservoir Engineering, Nanchong, China
1994 Course **University of Southern California**, School of Journalism: "Interpersonal Communication"
2000 Course **California State University**, Fullerton: "Advanced Microsoft Visual C++ and MFC Programming"

Computer Skills

Proficient in programming languages C/C++, MFC, Graphic Interface, Matlab and HTML;
Expertise in MS Visual Studio Dot Net.

Publication:

1. Dougherty, E. L. and Chang, J.: "A Method to Quickly Estimate the Probable Value a Shale Gas Well," paper SPE 134005-MS, presented at SPE Western Regional Meeting, Anaheim, California, May 27-29, 2010.
2. Kuncir, M. Chang, J., Mansdorfer, J. and Dougherty, E. "Analysis and Optimal Design of Gas Storage Reservoirs," paper SPE 84822 presented at the SPE Eastern Regional/AAPG Eastern Section Joint Meeting held in Pittsburgh, Pennsylvania, U.S.A., 6-10 September 2003.
3. Dougherty, E. L., Chang, J., Taeger, J.P., Al-Fulaij, McBride, R. D. "Devising Development Plans for Oil Reserves with a Tailored Strategic Planning Model (SPM)" paper SPE 37019 presented at the 1996 SPE Asia Pacific Oil & Gas Conference held in Adelaide, Australia, 28-31 October 1996.
4. Chang, J. and Yortsos, Y. C.: "Lamination During Silica Diagenesis - Effect of Clay Content and Ostwald Ripening," *American Journal of Science*, **294**, 137-172, February 1994.
5. Dougherty, E. L., Juber, F. and Chang, J. "Prediction and Analysis of Performance of Gas Wells Producing from Reservoirs Containing Several Noncommunicating Layers," paper SPE 25908 presented at SPE Rocky Mountain Regional/Low Permeability Reservoirs Symposium held in Denver, CO, U.S.A., April 12-14, 1993.
6. Dougherty, E. L. and Chang, J.: "A Computer System That Determines Optimal Capacity and Recovery for Gas Reservoirs," paper SPE 26254 presented at the 8th SPE Petroleum Computer Conference, New Orleans, Louisiana, July 11-14, 1993.
7. Dougherty, E.L. and Chang, J.: "Determining Optimal Capacity and Recovery from Gas Reservoirs: Impact of Permeability Contrast, Tubing Size and Compressor Horsepower," paper SPE 26145 presented at SPE 1993 Gas Technology Symposium, Calgary, June 28, 1993.
8. Chang, J. and Yortsos, Y. C.: "Effect of Heterogeneity on Buckley-Leverett Displacement," SPE 18798 presented at the SPE California Regional Meeting held in Bakersfield, California, April 5-7, 1989; *SPE Reservoir Engineering*, May 1992, 285-293.
9. Chang, J. and Yortsos, Y. C.: "Comments on 'Pressure Transient Analysis of Fractal Reservoir' SPEFE (March 1990) 31-38.
10. Ershaghi, I., Calisgan and Chang, J.: "A Critical Look at Methods Used for Estimation of Average Shut-in Pressure in Gas Storage Reservoirs," American Gas Association Operating Section Proceedings, 1992, 673-691.
11. Chang, J. and Yortsos, Y. C.: "Pressure Transient Analysis of Fractal Reservoirs," SPE 18170 presented at the 63rd Annual Technical Conference and Exhibition of SPE held in Houston, Texas, October 2-5, 1988; *SPE Formation Evaluation*, March 1990, 31-38.
12. Yortsos, Y.C. and Chang, J.: "Capillary Effects in Steady-State Flow in Heterogeneous Cores," *Transport in Porous Media*, 5, 399-420, 1990.
13. Chang, J. and Ershaghi, I.: "An Improved Microcomputer Approach to Well Test Interpretation," paper SPE 15928 presented at the SPE Eastern Regional Meeting held in Columbus, Ohio, November 12-14, 1986.