LENORMAND Roland

31 Avenue Gabriel Péri
92500 Rueil Malmaison
France

Tel: 33 6 73 47 54 86 Fax: 33 1 47 14 00 48
roland.lenormand@cydarex.fr
www.cydarex.fr

EDUCATION

ECOLE NORMALE SUPÉRIEURE AND UNIVERSITY OF ORSAY (68-72)

- background in physics, fluid mechanics, applied mathematics, chemistry and physicochemistry
- specialization in "theoretical physics" (DEA) with training in CEN of Saclay (Nuclear Research Center)

"AGREGATION OF PHYSICS AND CHEMISTRY" (1972)

- Diploma for teaching physics and chemistry at College and University level

PROFESSIONAL ACTIVITY

LABORATOIRE DE THERMIQUE DE L'ECOLE CENTRALE (73-75)

- Research in thermodynamics and fluid mechanics with PhD thesis in plasma physics;

INSTITUT DE MÉCANIQUE DES FLUIDES DE TOULOUSE (76-83)

- “Thèse d'Etat” (thesis during 7 years after PhD thesis)
- multiphase flow in porous media, imbibition and drainage mechanisms
- development of micromodels for visualization
- development of network simulations
- use of fractal and percolation theories for modeling of pore level fluid displacements

SCHLUMBERGER DOLL RESEARCH (USA) (84-85)

- research in wireline as scientific visitor

DOWELL SCHLUMBERGER (85-88)

- leader of a research team
- research on flow injection (heterogeneities, instabilities)
- carbonate acidizing
- foam injection as a diverter

INSTITUT FRANÇAIS DU PÉTROLE (89-2007)

- lecturer at IFP Training for several years in petrophycics
- project leader in petrophysics for 8 years
- "scientific expert" for flow in porous media
- developed several models for multiphase flow (fractal model for relative permeabilities ...)

- research in petrophysics: development of a new method for measuring capillary pressure and relative permeability at reservoir condition (semidynamic method), development of new apparatus for centrifugation, HP/HT equipment (more than 10 patents)
- development of a numerical simulator for interpretation of SCAL experiments
- new method for two-phase upscaling,
- modeling for two-phase flow with inertial effects in matrix and fractures
- modeling of flow of heavy oil in porous media
- development of original methods to measure permeability using drill cuttings.
- Development of experimental techniques for the measurements of very low permeabilities

CYDAREX (SINCE 2005)

- Creation in 2005 of Cydarex with IFP for the commercialization of results of the research done at IFP
- manager of CYDAREX (now 100% owner of CYDAREX).
- With an employee (Fabrice Bauget), development of new simulation modules for core analysis.
- In 2008, development of a laboratory for measurements on cuttings, and commercial activity for porosity and permeability on cuttings;
- Research activity for measurements of very low permeabilities, equipment and software
- Activity of consulting in Core Analysis for several companies (Oil company in Qatar, services companies)
- Consulting for Nagra for storage of nuclear wastes
- Teaching core analysis, PVT and flow in porous media at ENSPM (IFP school) and ENSPM-FI (IFP-training): several weeks per year in Rueil or in companies (Saudi Aramco, PDVSA, Sonatrach, ...)

PUBLICATIONS and PATENTS

More than 150 publications

- near 50 publications in International Journals: Nature, Physical Review Letter, Journal of Fluid Mechanics, Water Resources Research, Transport in Porous Media, SPE Journal, Revue de l'IFP, ...
- around 20 publications in the proceedings of the Society of Core Analysts (SCA)
- around 20 papers in the proceedings of the Society of Petroleum Engineers (SPE)
- more than 10 international patents on Petrophysics and Core Analysis

EXPERTISE

- general physics: thermodynamics, thermal, fluid mechanics
- statistical physics: random processes, fractals, geostatistics
- modeling of flow in porous media, multiphase flow, wettability, acidizing, flow of complex fluids, nucleation, EOR, heavy oils ...
- skills in lab experiments, development of original apparatus (patents), laboratory data acquisition
- numerical simulation: development of a numerical simulator for SCAL experiments
- teaching basic and advanced topics on flow through porous media, with applications to reservoir engineering and core analysis
- Routine and special Core Analysis: experiments, apparatus, wettability, data interpretation, upscaling

ADDITIONAL INFORMATION

- Teaching in several universities as partial time professor
- Member of editorial board of several international journals (Transport in Porous Media, Journal of Contaminant Hydrology, SPE Journal)
- Chairman of the SPE committee on EOR and Fluid Mechanics in 2001, representative for France in the IEA collaborative program on EOR, member of the technical committee of the Society of Core Analysts.