

Curriculum Vitae

FIELD EXPERIENCE

PROJECT MANAGER OF RESERVOIR STUDIES in fields Vuktyl, 1983-91, Kharjagy, 1985-91 (Komi Republic, *Russia*); Karachaganak, 1984-93 and Tengiz, 1987-93 (*Kazakhstan*); Astrakhan, 1984-93 (*Russia*); Sovetabad-Dauletabad, Balkui and Gugurtli, 1985-91 (*Turkmenistan*); West Barch, Sekhalom-1 and Ulesh, 1985-91 (*Hungary*)

INDUSTRIAL CONSULTANT in fields Andrew 1991-92 (BP, North Sea, *UK*), Hofflein 1993-95 (OMV, *Austria*), Rio Pojuca 1994-97 (*Brazil*), Fazenda Balsamo 1995-97 (Brazil), Taquipe 1997 (Brazil), Aqua Grande 1997-99 (Brazil), Buracica 1997 (Brazil), Miranga 1997 (Brazil), Sleipner East, Sleipner West, 1997, (Statoil, *Norway*), Snorre 1994-98 and Theta West, 1997-98 (Statoil, *Norway*); Canto-Amaro 1994-99 (Brazil), Marlim 1994-present, Namorado 1998-present, Albacora, Cherne, Quissama and Marimba, 2005-present (*Brazil*), Stybarrow (*Australia*) – 2008-2009, Mauri and Manutahi (*New Zealand*) – 2010-present

RESEARCH ACTIVITIES

- Injectivity decline: mathematical and laboratory modelling, well stimulation
- Gas-based IOR: upscaling; splitting between thermodynamics and hydrodynamics
- Boltzmann and Einstein-Smoluhowski models for suspension transport in porous media
- Propagation of oily particles, bacteria and viruses in aquifers
- Oilfield scaling: mathematical and laboratory modelling, scale removal techniques

MAJOR ACCOMPLISHMENTS

Exact solutions for non-self-similar hyperbolic problems. Analytical models for displacement of oil by slugs of polymers, surfactants, solvents and for combined technologies (miscible WAG, polymer-surfactant flood, etc.). Fast analytical technique for EOR screening.
A new model for miscible gas injection in fractured porous reservoirs. Finding the new phenomena of oscillatory block-fracture motion during gravity stabilized gas injection. Design of a tracer test to characterise fractured-porous reservoir.
An Onzager model for thermo-gravitational stratification of multicomponent oil-gas-condensate fluids in thick formations. Method predicting the depth distribution of reserves in heat and gravity Earth fields without data on thermo-diffusion coefficients.
Analytical model for secondary recovery of retrograde condensate by the use of gas and solvent slugs. Prediction of a new phenomenon of low saturation condensate phase mobility. A new method for laboratory determination of relative phase permeability for gas-condensate systems.
A new model for IOR displacements in porous media honouring phase discontinuity (droplets and ganglia). Experimental verification. Applications for WAG flooding.
A new laboratory (3-point-pressure) method for determination of formation damage parameters for PWRI.
Injectivity measurement and prediction tool for field/sea platform conditions.
Einstein-Smoluhowski equations for suspension transport in porous media. New effects of accessibility and flux reduction.
Boltzmann's model for suspension transport in porous media. Exact analytical solution using a new sink-source method. New effects of particle slowing down due to size exclusion and sorption. New governing averaged equations for deep bed filtration.