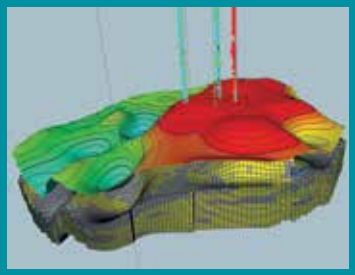
KAZAN FEDERAL UNIVERSITY

OIL PRODUCTION, OIL REFINING AND PETROCHEMISTRY



OIL PRODUCTION, CHEMISTRY AND PETROCHEMISTRY

The Institute of geology and petroleum technologies of Kazan Federal Universitys, being a point of mutual interests of science, education, industry and business, plays a leading role in development of the priority area of oil production, oil refining and petrochemistry.However, other institutes of Kazan Federal University also take part in R&D: Institute of Physics, Alexander Butlerov Institute of Chemistry, Institute of Computer Mathematics and Information Technologies, N.I.Lobachevsky Institute of Mathematics and Mechanics, Institute of Ecology and Geography. Our immediate goal is to create fundamentally new methods in order to develop "non-conventional" stocks.

Danis NOURGALIEV
KFU Vice Rector for Research,
Director of the Institute of Geology and Petroleum Technologies,
Professor, Doctor of Science in Geology and Mineralogy.

Strategy for development:
– research and development in areas that will be in high demand in the nearest future, including effective technologies for viscous oil and bitumen production (where we can become world leaders in the coming years);
– development of energy-efficient and clean technologies thanks to the extensive use of catalytic systems;
– mathematical simulations of problems at all levels.

Research will be carried out at the four Centres of Excellence in cooperation with leading research centres and business-partners, including: Schlumberger, JSC Tatneft, JSC Lukoil, JSC Rosneft, JSC Gazprom, and Xytel Inc. (USA).

World-class research by 2020:
1. Environmental changes
2. Stratigraphy and 3D-modelling of hydrocarbons deposits
3. In-situ oil refining
4. Petrochemistry and catalysis.

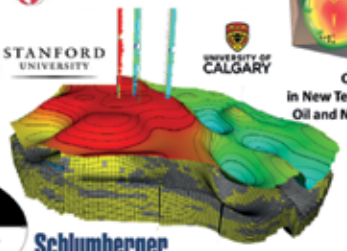
Interdisciplinary research in the Centres of Excellence:
- Stratigraphy and Paleogeoreconstruction
- Hydrocarbon Deposit Development Simulation
- New technologies of high-viscosity oil and natural bitumen production
- Catalyst Development for Oil Refining and Petrochemistry

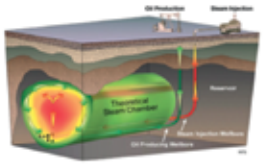
OIL PRODUCING, OIL REFINING & PETROCHEMISTRY LEADERSHIP

Environment → Stratigraphy & 3D-modelling → In-situ Oil Refining → Petrochemistry & Catalysts

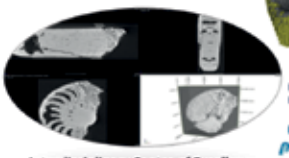
- Paleoclimatology, Ecology & Stratigraphy
- Homogenous & Heterogeneous catalysts
- Oil & Gas Reservoirs 3D-modelling (geological & hydrodynamic)
- In-situ combustion & catalyst aquathermolysis

Centre of Excellence for Hydrocarbon Deposits Development Simulation





Centre of Excellence in New Technologies of High-Viscosity Oil and Natural Bitumen Production



Interdisciplinary Centre of Excellence for Stratigraphy and Paleogeoreconstruction

Centre of Excellence in Catalyst Development for Oil Refining and Petrochemistry

Our goals to 2020

TOP-10	In-situ Oil Refinig R&D Center
TOP-5	for detail paleoclimate & paleogeophysics reconstruction for the last millennia R&D Center
TOP-10	in stratigraphy of oil & gas deposits R&D Center
TOP-20	In-situ combustion & catalyst aquathermolysis R&D Center
TOP-20	Petrochemistry & Catalysts R&D Center

INTERDISCIPLINARY CENTRE OF EXCELLENCE FOR STRATIGRAPHY AND PALEOGEORECONSTRUCTION

An interdisciplinary research Centre for study environmental evolution scenarios based on a reconstruction of the planet's history was established in cooperation with the leading international Centres for paleobiological, paleoclimatic, geochemical and isotopes research. KFU brand and unique objects relating to this field are connected with the following notions: Permian system, Kazanian Stage, Tatarian Series. The following universities will be our benchmarks for research effectiveness in the area:

Stratigraphy

- Institute of Reservoir-Petrology (Germany, Aachen);
- Boise State University, USA;
- Pretoria University, South Africa;
- Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany;
- Technical University Bergakademie Freiberg, Germany;
- New Mexico Museum of Natural History and Science, Albuquerque, USA.

Paleoclimatic reconstructions

- Alfred-Wegener-Instituts, Helmholtz-Zentrum für Polar-und-Meeresforschung (AWI), Potsdam, Germany;
- Universität Potsdam, Germany;
- A. N. Severtsov Institute of Ecology and Evolution, the Russian Academy of Science, Moscow, Russia;
- Frei Universität Berlin, Germany

The following laboratories have already been organised and will be organised in the field of Earth history research within the Interdisciplinary Centre of Excellence for Stratigraphy and Paleogeoreconstruction:

Laboratory of Stratigraphy of Oil and Gas Bearing Reservoirs, Director – Joerg Schneider (HI=15, Technical University Bergakademie Freiberg, Germany); adviser –Spencer Lucas (HI=23, New Mexico Museum of Natural History and Science, Albuquerque, USA), adviser – Vladimir Davydov (HI=15, Boise State University, USA), adviser – Marion Tichomirowa (HI=14, Technical University Bergakademie Freiberg, Germany), Annette Goetz (HI=9, Universiteit van Pretoria, Department of Geology, South Africa),

Isotope Research Laboratory (Helmut Weissert personal laboratory), Director – Helmut Weissert (HI=36, ETH, Zurich, Switzerland). The main line of the Laboratory development embraces all modern trends in paleontology and stratigraphy used in prospecting and exploration of hydrocarbon deposits as prerequisites in reservoir modeling, such as:

- development of biostratigraphic methods based on small scale fossils and microfossils for biostratigraphy of drilling cores;
- improvement of methods for palynofacies analysis and assessment of hydrocarbon potential of sedimentary sequences;
- improvement of sequence stratigraphic methods for analysis of mixed marine-continental and continental depositional sequences on the East-European platform.

Activities of the invited experts are focused on graduate and doctoral students supervision providing the expertise in modern research approaches. Doctoral programs offered: Sedimentologogy, Stratigraphy, Palaeontology, High-precision Radiometric Dating, Isotope Geochemistry(including mapping of outcrops and logging of drilling cores).

Field research of arctic and subarctic basins, conducted in collaboration with scientists from Alfred Wegener Institute for Polar and Marine Research and North-Eastern Federal University

Ongoing projects

• One of the most important projects is the Global Carboniferous and Permian Non-Marine - Marine Correlation Project of the joint international group of both the International Sub commissions on Carboniferous and on Permian stratigraphy (Leading scientist - the Director of the research laboratory and the Vice-chairman of the International Subcommission on Permian Stratigraphy (SPS), Professor J.W. Schneider).

• Collaboration with Karoo Research Initiative (KARIN) for exploration of coal, unconventional hydrocarbons, i.e. shale gas and rare metals on the territory of the South Africa (http://www.up.ac.za/en/geology/article/2010973/karoo-research). Leading scientist - Annette Goetz (Pretoria University, South Africa). The budget for drilling three deep drill cores and seismic survey is 2 mln. Euros for 2015-2017. The key project sponsor is the Shell company.

• IGCP 630 Permian-Triassic climatic and environmental extremes and biotic response.

• Joint RFBR and South Africa National Foundation. Project No. 14-05-93964. Searching for common signatures in deep time: bio-correlation of Permo-Triassic continental sedimentary successions with tetrapods from Russia and South Africa.

• German Research Foundation project DFG Schn 408/22-1. Multistratigraphic framework for continental Permian Triassic boundary sections of northern Pangaea: key to a better understanding of the ecological consequences of the end-Permian crisis in the terrestrial realm.

• German Research Foundation project DFG Schn 408/21-1. Pilot study of evolution of Late Palaeozoic insects of the Souss basin, Morocco.

• German Research Foundation project DFG Schn 408/20-1. Revision of the basal sphenacodonts (Haptodontinae): systematic and evolutionary implications.

• IGCP 609 project. Climate-environmental deteriorations during greenhouse phases: causes and consequences of short-term Cretaceous sea-level changes.

• International project Arctic Ecological Network: Modern and fossil bioindicators in the (sub-) Arctic (Arc-EcoNet).

• An interdisciplinary Russian-German project on the formation, turnover and release of carbon in Siberian permafrost landscapes.

Sediment core sampling and core sample preparation processes

Conferences

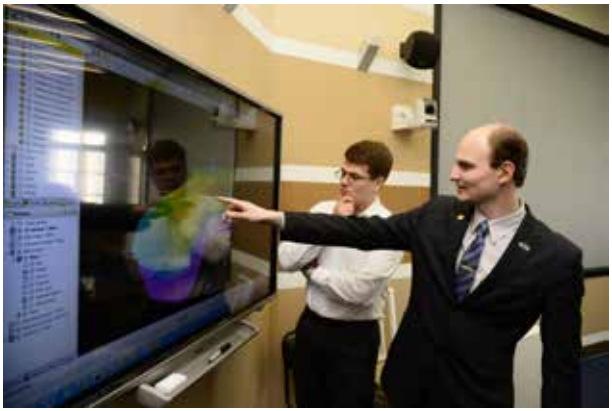
• Participation in organisation of the international conference and school for young scientists 'Palaeolimnology of Northern Eurasia', Petrozavodsk 21-25 September, 2014. "Paleolimnology of Northern Eurasia".
• The first International Congress on Continental Ichnology (ICCI-2015), Faculty of Sciences, Chouaïb Doukkali University, El Jadida, Morocco, April 21-25, 2015; https://sites.google.com/site/icci2015congress/home
• The XVIII INTERNATIONAL CONGRESS ON THE CARBONIFEROUS AND PERMIAN (ICCP 2015), Kazan, RUSSIA, August 11-15, 2015 (http://kpfu.ru/iccp2015).

The congress will give an impulse to further developments and promote the advancement of research in this area (special editions of Web of Science journals to be published: "Episodes" (IUGS journal), "Stratigraphy. Geological correlation", "Paleontological journal").

To improve the competences of graduates for working in international companies, institutes and teams a Double-Master Degree program will be organised jointly by Kazan University and the Technical University (TU) Bergakademie Freiberg, Germany.

Within the Interdisciplinary Centre of Excellence for Stratigraphy and Paleogeoreconstruction Biocontrol research laboratory working in the field of Environment was organised (Director – Associate Professor Polina Galitskaya, Scientific adviser – Professor Svetlana Selivanovskaya; Professor of the University of Helsinki, Martin Romanchuk (HI=28), Professor of the University of Goettingen, Yakov Kuzyakov (HI=36), Professor of the Hebrew University of Jerusalem, Elisha Tel-Or (HI=21), Associate Professor of the University of Helsinki, Aki Sinkkonen (HI=8).

Biocontrol laboratory concentrates its work on analysis of processes observed in soil during hydrocarbon intake, including environmental changes, as well as microbial soil community functioning and structure. It serves as a basis for new biotechnologies of soil restoration. Research includes technologies of production, purification and application of the so-called "green" surfactants. Their application will permit to improve oil recovery and reduce ecological hazard of oil production processes.



Research laboratory for stratigraphy of oil-and-gas bearing reservoirs

	**Spencer Lucas** (invitation planned for 2015) New Mexico Museum of Natural History and Science HI=23 https://www.researchgate.net/profile/Spencer_Lucas
	**Schneider Joerg Walter Herbert** Technical University Bergakademie Freiberg, Germany Doctor of Science, senior researcher E-mail: joerg.schneider@geo.tu-freiberg.de https://www.researchgate.net/profile/Joerg_Schneider3
	**Goetz Annette Elizabeth** Universiteit van Pretoria, Department of Geology, SAR PhD, senior researcher E-mail: Annette.Goetz@up.ac.za https://www.researchgate.net/profile/Annette_Goetz
	**Davydov Vladimir** Boise State University, USA PhD in Geology and Mineralogy, senior researcher E-mail: vdavydov@boisestate.edu

	**Tichomirowa Marion Brigitte** Technical University Bergakademie FreibergGermany Doctor of Science in Geology and Mineralogy, senior researcher E-mail: tichomir@mailserver.tu-freiberg.de https://www.researchgate.net/profile/M_Tichomirowa
	**Kogan Iliya** Technical University Bergakademie Freiberg, Germany Junior researcher E-mail: i.kogan@gmx.de
	**Naugolnykh Sergey** Geological Institute of the Russian Academy of Science, Moscow Doctor of Science in Geology and Mineralogy, senior researcher E-mail: naugolnykh@list.ru https://www.researchgate.net/profile/S_Naugolnykh

Research laboratory for Paleoclimatology, Paleoecology and PaleoMagnetism

Andreev Andrei A., HI=29
Researcher
University of Cologne

Hedi Oberhaensli, HI=15
Germany, Museum für Naturkunde - Leibniz Institute for Research on Evolution and Biodiversity, Berlin, Germany

Karl Fabian, HI=16
Geological Survey of Norway, Trondheim, Norway

Michael Winklhofer, HI=23
Department of Earth and Environmental Science, Ludwig-Maximilians-University Munich, Germany.

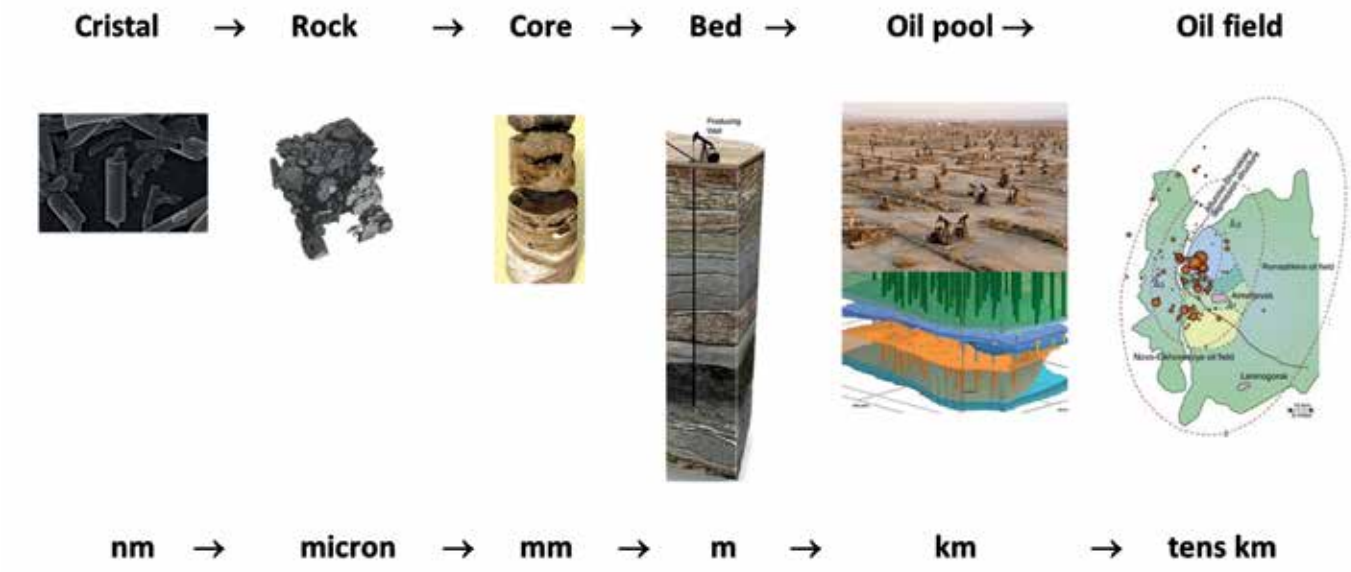
Yves Gallet
Researcher
Equipe de Paléomagnétisme, Institut de Physique du Globe de Paris

Tarasov Pavel
Researcher
Institute of Geological Sciences, Palaeontology
Freie Universitaet Berlin

CENTRE OF EXCELLENCE FOR HYDROCARBON DEPOSIT DEVELOPMENT SIMULATION

Within the Centre of Excellence for Hydrocarbon Deposit Development Simulation research is focused on simulation of thermocatalytic processes of high-viscosity oil deposit development.

There will be an interdisciplinary research entre for hydrocarbon deposit development simulation organised on the basis of the newly formed 3D-GEO centre (complete analogue of I-center Schlumberger). This centre will collaborate with the leading international centres for simulation from the pore level (digital core) to the deposit level.



X-ray computed tomography research laboratory

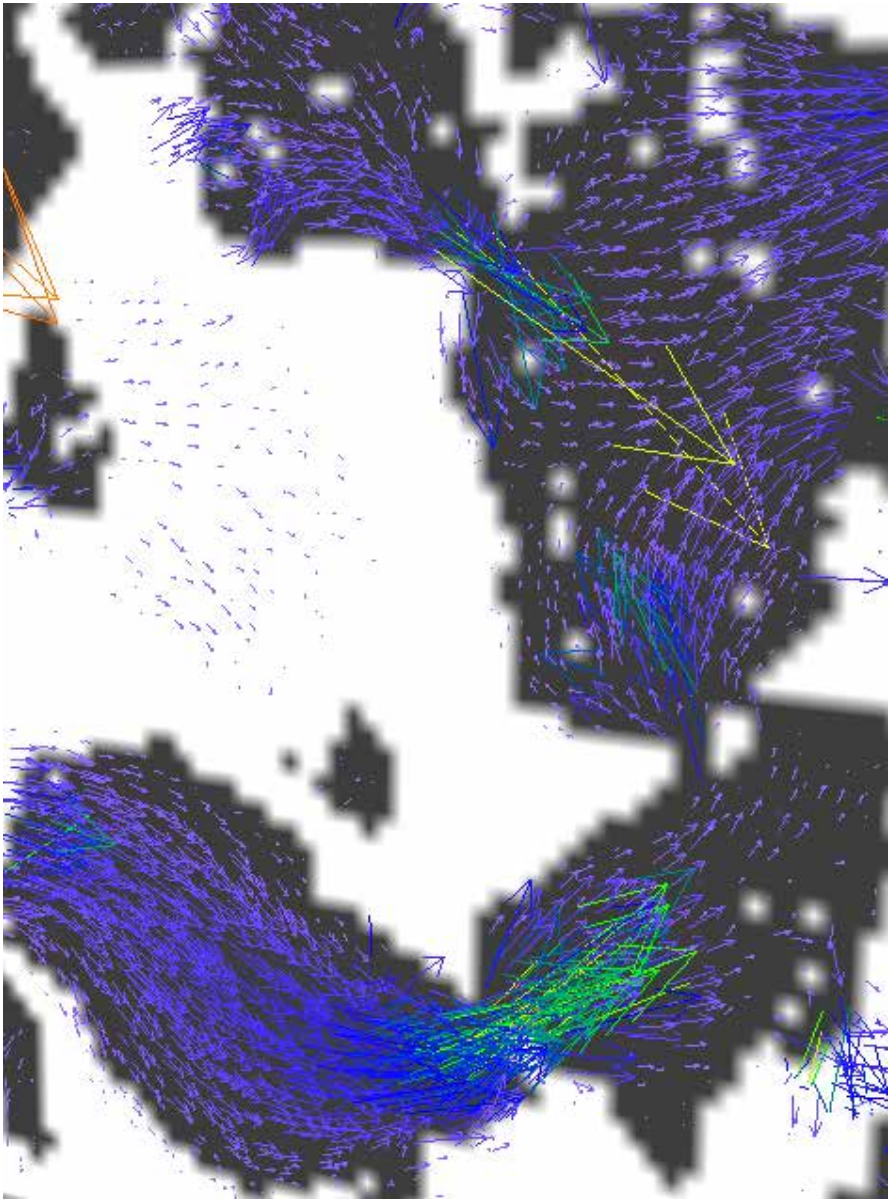
Laboratory equipment includes a unique setup X-ray Tomography "Phoenix V | tome | V S240" and filtration device "Wille Geotechnik".

Leading scientist: Boris Gurevich, (h=20, University of Western Australia, Australia), Institut Français du Pétrole, IFP, Paris, France.

Research is aimed at creation of a mathematical model of multiphase multicomponent liquid filtration, considering physico-chemical effects on the porous medium; the model will use parameters obtained through analyzing tomography studies of cores (carbonate, dolomite, etc.), such as a porosity, absolute permeability, tensor permeability, pore size distribution; experiments on chemicals effects (acid, polymers) on different cores, as well as process analysis and visualization using X-ray tomography; comparison of results obtained through numerical simulation with experimental results.

Plans for 2015-2016 include:

1) creation of a software package simulating flow of viscous fluid in digital core and calculation of its main filtration characteristics (updated Russian analogue of import software AVIZO FIRE Xlab Hydro);
2) fine-tuning of experimental techniques for filtration testing on cores of different nature, including pumping of acids, bases, polymers and coolants; process imaging in X-ray tomography;
3) building of mathematical models describing reacting liquid flow in a digital image of the core and verification of these models on the basis of experimental data.

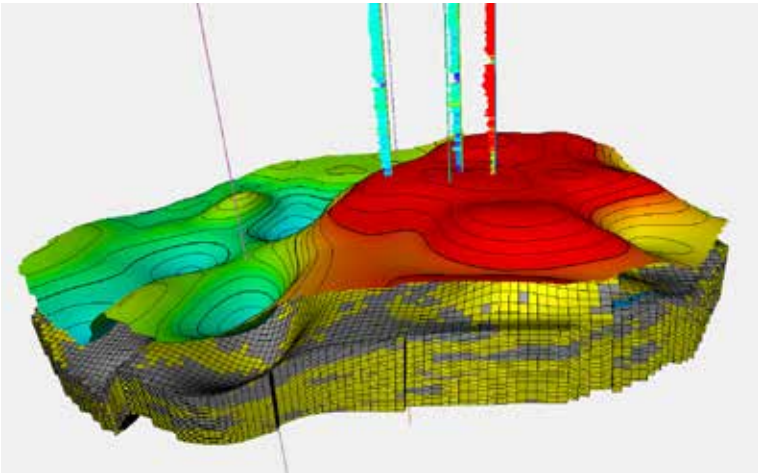


Interdisciplinary Multi-functional Laboratory for Geological and Hydrodynamic Modelling "3D GEO Centre"

Interdisciplinary Multi-functional Laboratory for Geological and Hydrodynamic Modelling "3D GEO Centre" was established at the Institute of Geology and Petroleum Technologies in 2012. The Laboratory is stuffed with cutting-edge equipment and software by Schlumberger.

Key research areas:

- Building geological models of oil and gas deposits
- Building hydrodynamic models
- Basin simulation of major oil and gas bearing regions
- Seismo-stratigraphic research



Training and Research Hydro-geochemical Laboratory

Within the framework of international cooperation we shall create:

– software package "Intelligent system for design and management of rational development of oil reservoirs difficult to recover", including:

1. Technology of creating multi-scale digital litho- and petro-physical models of complex reservoirs based on a set of innovative methods.
2. Software modules for building geological, geophysical and filtrational models of deposits.
3. Software modules for simulation of coupled processes of deposit development for oil reservoirs difficult to recover.
4. Technology of selecting optimal methods of enhanced oil recovery (EOR) and their effectiveness evaluation under specific geological conditions, including use of tracer techniques.
5. Technologies for creating an effective 4D-model of geological environment using distant, geodetic, geochemical and geophysical methods to develop procedures for monitoring geodynamic state of the developed oil deposit.

The new **Laboratory for Mathematical Modelling of High-Viscosity** Oil Extraction Processes using thermo-catalytic methods (2015-2018) with participation of Schlumberger (David Law, HI =10) and Computer Modelling Group Ltd (Canada) (Dennis Coombe, HI =12), Mastorakos Epaminondas (HI= 28, University of Cambridge, UK), Margot Gerritsen (HI =14, Stanford University, USA) and Iskander Akhatov (HI =16, North Dakota State University, USA) will be launched.

Competencies and technologies developed in this Centre are unique and will be in high demand due to development of large reserves of high-viscosity all over the world.

CENTRE OF EXCELLENCE NEW TECHNOLOGIES OF HIGH-VISCOSITY OIL AND NATURAL BITUMEN PRODUCTION

In the field of enhancing the efficiency of hydrocarbons extraction we focus activities of the Centre on development of methods for in situ oil refining (aqua thermolysis, in situ combustion, use of catalysts) and development of methods for ground control of processes indicators inside the reservoir.
The following world-class laboratories were launched at the Institute of Geology and Petroleum Technologies within the framework of Centre of Excellence in New Technologies of High-viscosity Oil and Natural Bitumen Production:

Thermodynamic and rheological features of high-viscosity oil and non-conventional hydrocarbons

Sergey P. Verevkin (HI=34, University of Rostock, Germany)

Vladimir N. Emel'yanenko (HI=18, University of Rostock, Germany)

Jean Charles De Hemptinne (HI=19, IFP Energies nouvelles, Paris, France)

In-situ catalytic refining of high-viscosity oil, including nanophase catalysis, heterogeneous catalysis and geocatalysis

Xavier Rozanska (HI=19, CNRS Lyon University, Lyon, France)

Tayfun Babadagli (HI=18, University of Alberta, Canada)

Pedro Pereira-Almao (HI=15, University of Calgary, Canada)

Schoonen Martin (HI=37, Stony Brook University, USA)

Research of in situ combustion process

Anthony Kovscek
(HI=26, Stanford University, USA)

STANFORD UNIVERSITY

Mustafa Versan Kok
(HI=28, Middle East Technical University, Ankara, Turkey)

ORTA DOĞU TEKNİK ÜNİVERSİTESİ

Gordon Moore
(HI=16, University of Calgary, Canada)

UNIVERSITY OF CALGARY

Malcolm Greaves
(HI=14, University of Bath, UK)

UNIVERSITY OF BATH

In-situ temperature front propagation using geophysical positioning methods, with the assistance of the companies Xytel (USA), Belgrave Oil and Gas Corp (USA) and Alberta Innovates - Technology Futures, (Canada).

Claude Gadelle
Xytel (USA)

XYTEL MADE IN THE USA

John Belgrave
HI=10
Belgrave Oil and Gas Corp

Alex Turta
HI=8
Alberta Innovates - Technology Futures,
Canada

Alberta Innovates Technology Futures

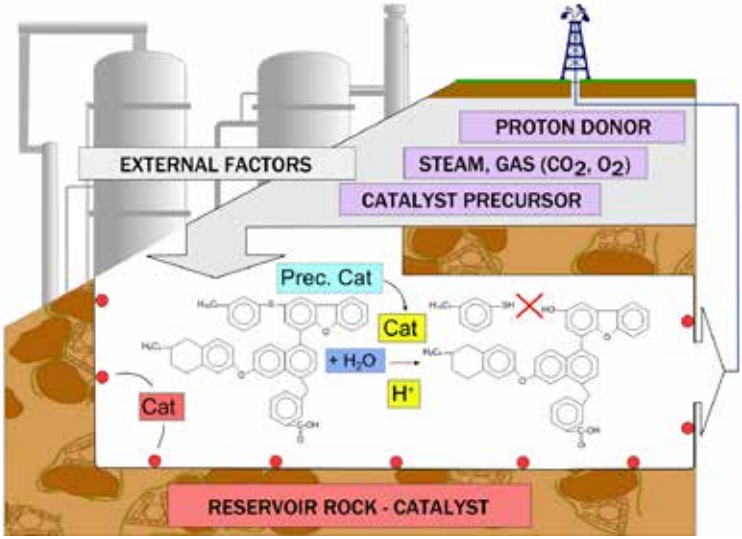
Louis Castanier
HI=10, Stanford University, USA

STANFORD UNIVERSITY

To advance research in the area of **enhanced oil recovery** KFU plans to organise a Centre for studying unconventional sources of hydrocarbons and developing technology for enhancing oil recovery of layers, investigation of the processes of oil extraction, as well as solving practical tasks on the basis of complex geochemical, lithologic and petrographic, petrophysic, hydrodynamic research.

Our key partners in this research area will be:
• Colorado School of Mines Petroleum Engineering Dept., Golden, USA;
• Core Laboratories, Inc.;
• KTH Royal Institute of Technology, Stockholm, Sweden;
• Carnegie Institution of Washington, USA.
• The laboratories involved:
• Training Laboratory of Oil Reservoirs Physics
• Sub-department of Petroleum Chemistry in the Institute of Organic and Physical Chemistry (established in 2014)
• Laboratory of Low-Permeability Reservoirs Studies
• Laboratory of Physical Modeling of Oil Reservoirs (impact of heating, chemical addition and etc.).

The Center carries out interdisciplinary research in the following areas:
• studies of thermodynamic characteristics of unconventional hydrocarbons and their major components (thermal stability, phase transitions and higher calorific values);
• studies of kinetic parameters of catalytic and non-catalytic oxidation of crude oils in porous media;
• identification of general "composition-property" and "structure-property" relationships within thermocatalytic (in-situ combustion, aqua-thermolysis) crude oil refining in porous media (elemental and fraction composition of crude oil, properties of rock, structure of chemical reagents used, etc.);
• development of general thermodynamic model of in-situ combustion based on the laboratory and oil-field data;
• development of catalytic systems for in-situ refining of heavy crude oils with a view to enhance oil recovery, simplify the subsequent preparation, transportation and processing of hydrocarbons;
• development of methods for control of combustion front on the basis of measurements of magnetic properties of rock before and after thermocatalytic stimulation;
• development of our own software as an additive module to the well-known commercial products for oil recovery modelling;
• provision of complex recommendations for effective usage of thermal and thermocatalytic technologies of unconventional hydrocarbons recovery in certain fileds of oil companies;
• training qualified personnel in the field of oil production and refining in the framework of new interdisciplinary Master's Degree programs and supplementary education.



Unique equipment of the Centre

Research Centre is fitted with all the necessary set of equipment and experimental techniques, which allow to pursue a full cycle of R&D works in the field of thermal and catalytic methods of enhanced oil recovery.

STA 449C Jupiter+QMS 403C Aeolos Netzsch
Simultaneous thermogravimetry + differential scanning calorimetry + mass spectrometry technique (three techniques in one device)
- Temperature range: room temperature – 1500°C;
- Heating and cooling rates: 0.01 K/min – 50 K/min;
- Mass of sample: 1 – 5000 mg;
- Atmosphere: inert, oxidative, static, replacement, dynamic;
- Simultaneous thermal experiments with mass-spectrometry analysis are available;
- Equipped with a unique system PulseTA®

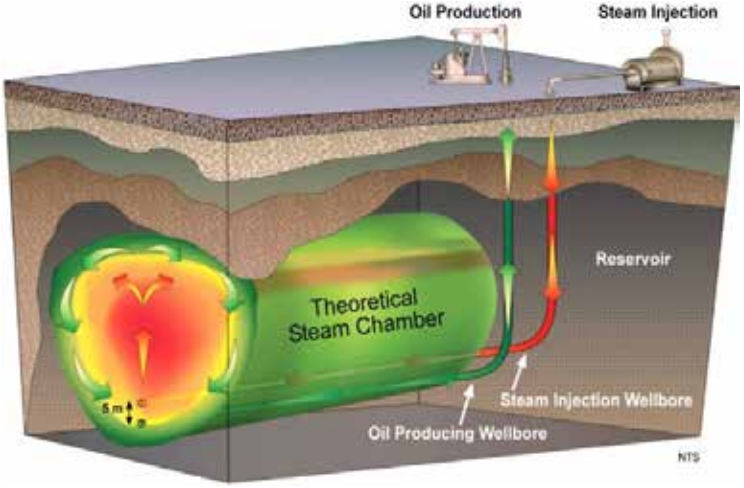
Measured data: heat capacity; heat effect (heat, enthalpy); temperature of fusion, crystallization, re-crystalization, phase transition, glass transition, chemical reaction, thermal degradation; loss of mass; remaining mass and oxidation temperature etc. Mass-spectrometry gives an opportunity to analyze gaseous products.

Accelerating Rate Calorimeter ARC® 254
(Adiabatic reactionary calorimetry)
This equipment is used for physical-chemical studies of oxidation and pyrolysis of crude oils and bitumen as well as behavior of explosive and thermally unstable compounds. This equipment has special VariPhi module, that enables to study reactions in different modes, and an injection system for input of liquid and gaseous compounds during the experiments.
Heating rate: 0.01 - 10 K/min
Temperature range: 0-550˚C
Pressure range: 0-600 bars
Sample volume: 0.,5 – 130 ml

Ramped Temperature Oxidation (RTO)
(Plant for Oil Oxidation Studies under Linear Temperature Change)
This plant is used for modeling reservoir in-situ combustion conditions, studies of oil oxidation kinetics in porous media (activation energy), estimation of amount of coke formed. The obtained results can be applied for assessment of field suitability to its development by the in-situ combustion technology.

Research and Business partners

- Stanford University, USA;
- French Institute of Petroleum (IFP), France;
- Middle East Technical University, Turkey;
- University of Rostock, Germany;
- University of North Texas;
- University of Bath, UK;
- University of Cambridge, UK;
- Texas A&M University, USA;
- Alberta Innovates Technology Futures, Canada;
- University of Alberta, Canada;
- University of Calgary, Canada;
- CNRS Lyon University, Lyon, France;
- Xytel Inc. USA.
- Gubkin Russian State University of Oil and Gas;
- A. E. Arbuzov Institute of Organic and Physical Chemistry, Kazan Scientific Centre, Russian Academy of Science;
- A. V. Topchiev Institute of Petrochemical Synthesis, Russian Academy of Science;
- Tatneft, JSC;
- RITEK, JSC;
- Lukoil, JSC;
- NIInefteprom chim, JSC;
- Zarubezhneft, JSC;
- Gazprom Neft, JSC;
- MIRRICO Group.



CENTRE OF EXCELLENCE IN CATALYST DEVELOPMENT FOR OIL REFINING AND PETROCHEMISTRY

On the basis of the **Centre of Excellence in Catalyst Development for Oil Refining and Petrochemistry** we have started developing new areas in catalysis connected with application of nano-sized clusters of transition metals, chemically decorated carbon nanotubes and nanostructures, as well as with development of methods for non-chemical activation of metal-complex catalysts in the sphere of electrochemical technologies application. The following leading scientists have been invited, including coordinators of catalyst-related projects implemented within the European Union Framework programmes:

Laboratory of new catalysts for petrochemistry

	**Dr. Giuliano Giambastiani** (HI=24, Institute of Chemistry of Organometallic Compounds, ICCOM-CNR, Sesto-Fiorentino, Florence, Italy)
	**Prof. Dr. Joachim Heinicke** (HI=27, Institute of Chemistry and Biochemistry, University of Greifs-wald, Germany)
	**Dr. Andreas Petr** (HI=19, Leibniz Institute for Solid State and Materials Research Dresden, Germany)

Activity Plan in the field of Homogenous Catalysis until 2020

Research Component

- Research of processes of selective collection of ethylene-based oligomers with the use of transition metals and chemically modified nanomaterials (carbon nanotubes, nanoscale clusters of transition metals).
- Developing new unconventional approaches in collecting active forms of organometallic catalyst with the use of electrochemical methods.
- Publication of results in highly-ranked journals.

Academic Component

- Launching new educational programmes and methodological recommendations for KFU students.
- Preparing specialists in homogenous catalysis for HEIs and industry.

Practical Component

- Developing new types of catalyst systems for processes of homogenous oligomerization and polymerization of ethylene, ethylene polymerization and selective collection of required fractions of linear alpha-olefins.
- Establishing new industry-oriented research laboratories dealing with homogenous catalysis.
- Implementing new technologies at petrochemical plants in Tatarstan Republic and Russian Federation.

International Cooperation

- Participating in international research conferences and meetings presenting research achievements to global community and sharing the results of joint research within international projects.
- Organizing training for students, young scholars and specialists at leading global research centers focused on homogenous catalysis studies.
- Attracting international partners and investors for development of a new research field Homogenous catalysis at Kazan Federal University.

Unique equipment of the Centre

Polyclave
(Catalytic complex for conducting catalytic screening of homogenous metal-complex catalysts)
The device is aimed at studying catalytic activity of metal-complex catalysts in processes of homogenous oligomerization and polymerization of ethylene. The fully automated system allows to receive the complete range of physical and chemical parameters of catalytic process, including temperature supervision of reaction feed, pressure, stream velocity and gas-flow rate (monomers) during the experiment.

Research and Business partners

- University of Greifswald, Germany
- Leibniz Institute for Solid State and Materials Research Dresden, Germany
- Institute of Chemistry of Organometallic Compounds (ICCOM-CNR), Italy

Leibniz-Institut für Festkörper- und Werkstoffforschung Dresden

CENTER FOR ADVANCED TRAINING QUALITY MANAGEMENT AND MARKETING

«WE COMBINE EVERYBODY'S POSSIBILITIES FOR THE SUCCESS OF EVERYONE!»

http://kpfu.ru/geo/cdo
http://kpfu.ru/geo/catqmm

Center for advanced training quality management and marketing offers programs of training, retraining and advanced training.
In 2013 and 2014 the center won the tender for the implementation of additional educational training programs within the framework of the Russian Presidential Program engineering personnel training.

In accordance with your requirements we are ready to form a program of additional education (training, retraining) for your employees and customers of your services and technologies.
In our center successfully trained employees of the companies Gazprom, Geotech Holding, Tatneft, TNG-Group and many others.

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