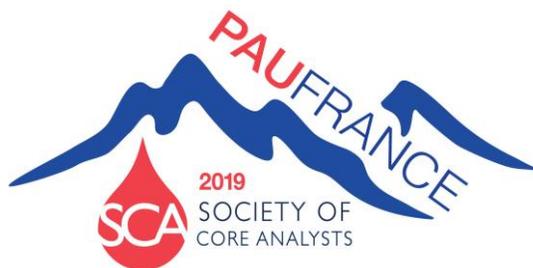




Pau, France

Aug 26 – 30, 2019

# Final Program



# Core Analysis in a Digital World

## From the 2019 President

Dear Colleagues,

On behalf of the Society and the Board of Directors, I am delighted to welcome you to the 2019 International Symposium of the Society of Core Analysts (SCA). This year's symposium theme is "Core Analysis in a Digital World". The symposium is being held in the beautiful French city of Pau, situated just north of the Pyrenees Mountains and home to Total's research group.

Special thanks to this year's VP Technical (I told you it was a lot of work), Holger Ott, VP Arrangements, Benjamin Nicot, and (of course) Melanie Young. A symposium such as this does not happen on its own. I am confident you will find this year's symposium as rewarding and fun as previous ones.

With the ups and down of our industry it is becoming increasingly important to rely on science and technology in our decision-making process. I firmly believe that integration of technologies, core analysis, well logging, digital rock physics, etc., is the answer to full understanding of our reservoirs. I have enjoyed coming to the SCA symposium (my first one was in Toronto 2005) over the years and developing long lasting friendships and colleagues.

I would like to thank the board and all members for my year as president. It has been a pleasure to contribute back into a society that I have gotten so much from.

Safe travels,

Derrick Green

SCA President 2019

# From the 2019 VP Arrangements

Bienvenue à Pau!

On behalf of the Organizing Committee, I would like to welcome the attendees of the 2019 SCA Annual Symposium in the Palais Beaumont in Pau. We hope that this city full of history and scenic views over the Pyrenees Mountains will stimulate both young and seasoned colleagues from all around the world under our Symposium theme “Core Analysis in a digital world”.

During our conference in the heart of Pau, you will hopefully discover and enjoy a city with many different aspects and lots of history. From the Palais Beaumont and the very close Boulevard des Pyrenees you will be able to enjoy the scenic views of the Pyrenees Mountains.

The history of Pau is marked by the birth of Henry of Bourbon in 1553 in the castle that you can visit in the medieval quarter. He gained access to the throne of France in 1589 under the title of Henry IV.

The city also developed during the late 19<sup>th</sup> early 20<sup>th</sup> century with a massive influx of foreign tourists. From this period dated the first golf course on the continent, this is where our golf event will be held on Sunday 25<sup>th</sup>. This period also saw Pau becoming one of the capitals of the nascent aerospace industry under the influence of the Wright brothers. In the city you will see many villas and mansions dating from this period and generally called “les villas anglaises”. Our Gala dinner on Wednesday 28<sup>th</sup> will be held in one of the beautiful villa anglaise called Villa Navarre.

During the late 20<sup>th</sup> century Pau turned into oil and gas with the development of a big gas field in the nearby city of Lacq. Since then, Pau has been tightly linked to the oil and gas sector with Elf and now Total, and we will visit on Tuesday 27<sup>th</sup> the latest log calibration center installed in the vicinity of pau, and I would like to thank SPWLA for their help in organizing this visit.

Pau is also a city very much turned into sports with the proximity of the mountains for hiking and skiing, the proximity of the ocean for surfing, and the wild river “gave de pau” flowing in the very city. On Tuesday 27<sup>th</sup> the young professionals will have a chance to experience wild water rafting at Pau wild water stadium where the 2017 canoe world championship was held! Hold on tight young professionals!

We will discover more of the mountains around and the geology with the traditional Friday field trip.

With a large variety of vendors, technical veterans, industry leaders, and rising young professionals, the SCA meeting is a great opportunity for professional interaction, to share

ideas, innovations, knowledge, best practices, products and services. In the exhibition halls the vendors showcase their latest technical innovations and offerings in equipment and services.

I would like to thank the sponsors and vendors for their support, the authors and technical committee of the SCA for their dedication to make the SCA a passionate conference, and a special thank you for all the team from Total who helped in the organization.

Welcome to Pau!

Benjamin NICOT,  
VP Arrangements

# From the 2019 VP Technology

Dear Colleagues and Friends

Welcome to the 2019 SCA International Symposium in Pau, France!

This year's symposium is titled "Core Analysis in a Digital World". Even though we have long operated digitally, everyone understands something else under digitization and there is much need for discussion. This year's symposium will contribute to it; next to the various classical sessions, we have contributions to the symposium theme starting on Monday with the short courses on numerical interpretation of SCAL measurements and the numerical interpretation of pore scale experiments by topological means. In addition, there will be many occasions such as coffee breaks and social events to discuss digitization.

As you may have noticed, there were some changes in the selection and review processes of the submitted abstracts and manuscripts. With the goal of increasing the quality of the papers, the board decided to ask for an extended number of full manuscripts associated to oral and alternate oral presentations, but no longer for poster presentations. The reactions from the community were mixed; some poster presenters welcomed the idea where others would have liked to publish a manuscript. In addition, the already tough review process has been extended to include a final assessment and ranking of the already reviewed manuscripts. From 150 received abstracts, 44 manuscripts and 47 abstracts were accepted populating the 2019 technical program with 36 orals and 55 poster presentations.

Although I have gone through the SCA review process several times as author and reviewer myself, I was surprised at the number and quality of technical discussions during the review process and the commitment and dedication of everyone! It was a very good personal experience. For this I would like to thank the authors and the Technical Committee who form the backbone of this symposium and who are responsible for the high technical standard of the SCA. Last but not least, my special thanks go to Melanie Young, our SCA Executive Director, for her invaluable support in all matters. With these contributions we have again a solid technical program, and I am sure that we will have excellent presentations and fruitful technical discussions that will help us progressing as a community. I am looking forward to seeing you in Pau!

Holger Ott

SCA VP of Technology

## Current SCA Board

EXECUTIVE DIRECTOR	Melanie Young Society of Core Analysts
PRESIDENT	Derrick Green Green Imaging Technologies, Inc
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U.S. DIRECTOR	Will Richardson Chevron

## 2019 Technical Committee

The SCA Technical Committee is the backbone of the Society of Core Analysts. Its members rank and evaluate the submitted abstracts and the technical quality of the manuscripts. In the review of each individual manuscript and in-depth discussions with the authors, many hours are spent until a manuscript is accepted. In many cases, the interaction between authors and TC members leads to a higher quality of individual manuscripts. As a result, the annual SCA symposia are packed with high-quality presentations. For this, sincere acknowledgement goes to this year's Technical Committee members:

Adam Moss  
Arjen Cense  
Benjamin Nicot  
Carl Songergeld  
Cyril Caubit  
David Potter  
Derrick Green  
Doug Ruth  
Evren Unsal  
Eric Withjack  
Fabrice Pairoys  
Gerald Hamon  
Hassan Mahani  
Hendrik Roler  
Holger Ott  
James Howard  
John Shafer  
John Mills

Jos Maas  
Josephina Schembre-McCabe  
Kevin Flynn  
Marc Fleury  
Matthias Appel  
Matthias Halisch  
Mohammed Ameen  
Ole Torsæter  
Olga Vizika  
Olivier Lopez  
Patrick Egermann  
Roland Lenormand  
Ryan Armstrong  
Souhail Yussef  
Stefano Pruno  
Steffen Berg  
Ted Braun  
Will Richardson

# Technical Achievement Darcy Award Recipient

## Ted Braun

Ted Braun obtained a BS degree in Chemical Engineering from Case Western Reserve University in 1976, and immediately began a 34-year career at Exxon Production Research Co., which later became ExxonMobil Upstream Research Co. He spent his first two years researching in-situ combustion as an enhanced oil recovery technique, and the remainder in core analysis. After formally retiring from the company in 2010, he has worked as an independent consultant.

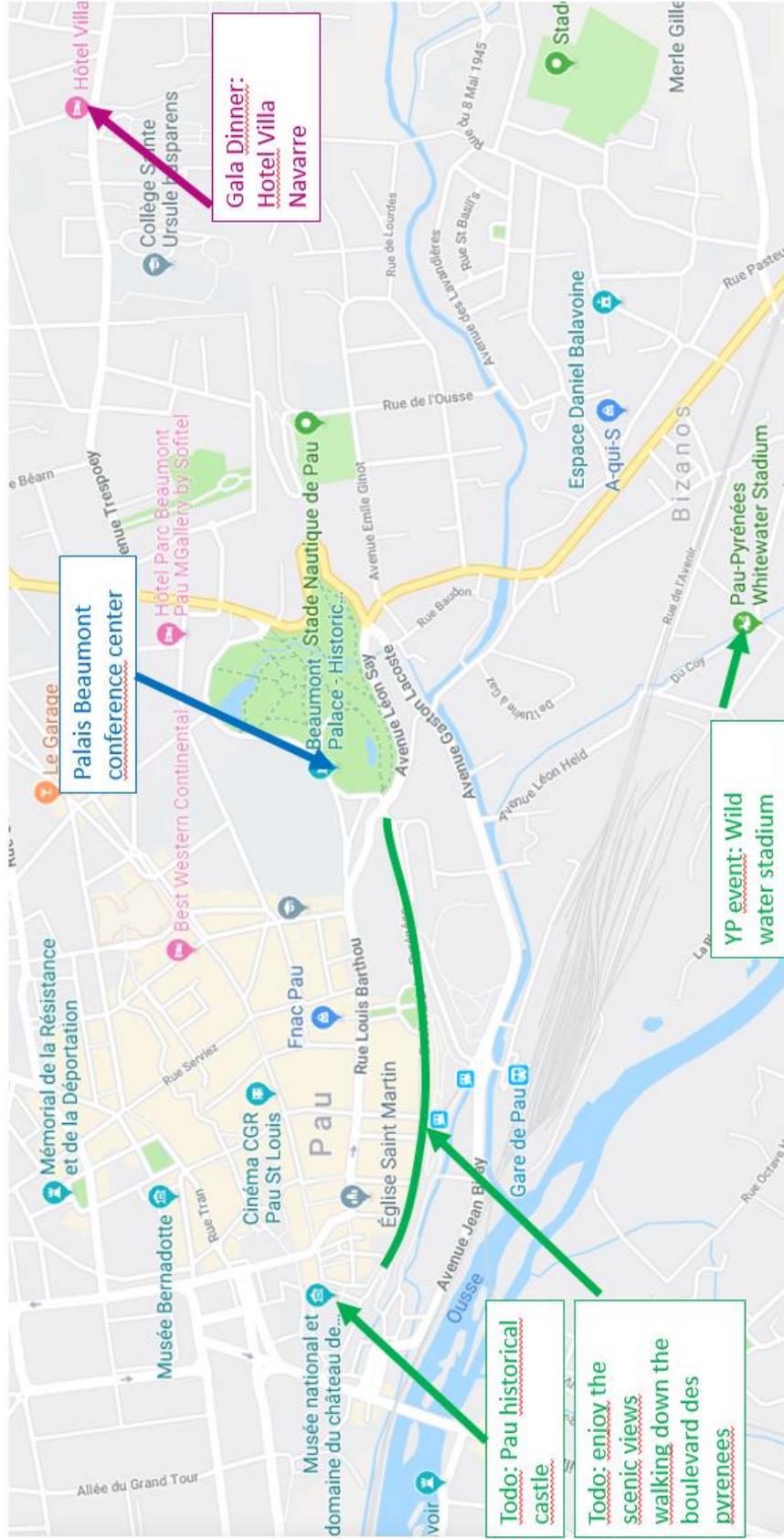
His first assignment was to develop the capability to measure relative permeability by the steady-state method at reservoir temperature and pressure, in order to obtain the most reliable data possible for the Prudhoe Bay field. A series of other research areas followed, each targeting specific data needs of the company:

- Accurately measuring oil saturations and compositions in gas cap cores.
- Defining hysteresis behavior in oil-water relative permeability.
- Restoring the wettability of cores contaminated by oil-based mud.
- Measuring relative permeability for gas condensate reservoirs.
- Measuring shale permeabilities in the nano-Darcy range and their response to mechanical stress.

In addition, he has taught in Exxon in-house training courses and served as a mentor for many of the company's core analysts and reservoir engineers. A frequent topic of advice was to apply the principles of chemical engineering and geochemistry to laboratory core analysis measurements.

Ted has authored or co-authored seven SCA papers and nine SPE papers. He is a lifetime member of the Society of Core Analysts. He has held a series of SCA offices, beginning with the Vice President of Technology for the 2010 Symposium in Halifax, and progressing to president-elect, president, and past-president. Among his colleagues over the years have been four earlier recipients of the SCA's Darcy Award / Technical Achievement Award.





Palais Beaumont  
conference center

Gala Dinner:  
Hotel Villa  
Navarre

YP event: Wild  
water stadium

Todo: Pau historical  
castle

Todo: enjoy the  
scenic views  
walking down the  
boulevard des  
pyrenees

## **Golf – Sunday 25<sup>th</sup>, 11:00 a.m. – 5:00 p.m.**

Pau Golf Club is the oldest club in continental Europe. The development of this sport, can be attributed to the founding in 1856 of the Pau GOLF CLUB. During the Napoleonic wars and the Battle of Orthez in February 1814, some regiments of WELLINGTON's army were quartered in Pau.

Among the soldiers, two Scottish officers who were never separated from their golf clubs and took every opportunity to practice their favorite sport. During their travels, they were impressed by the beauty of the countryside around Billère close to the gates of Pau. They decided that the banks of the mountain stream, with the Pyrenees as a backdrop would make an ideal setting for a golf course

## **Short Courses – Monday 26<sup>th</sup>, 9:00 a.m. – 1:30 p.m.**

The short courses are on the numerical interpretation of data, and in more detail: on “Numerical History Matching of SCAL Data; Best Practice” and on “Interpretation of Pore Scale Experiments; Alternative Descriptions of Porous Media Flow by Topological Means”. A special thanks goes to Jos Maas, Jules Reed, Ryan Armstrong and Steffen Berg for the preparation of the course material and for organizing and presenting the short courses.

Coffee and tea will be available during breaks. Lunch will be provided to attendees.

Short Course is Kindly Sponsored by: Thermo Fisher Scientific

## **Opening Reception –Monday 26<sup>th</sup>, 5:30p.m. - 9:00 p.m.**

The Opening “Icebreaker” Reception will be held at the restaurant “la belle époque” on the ground floor of the conference center Palais Beaumont. Snacks and drinks will be served to foster a relaxed atmosphere to meet and greet both old and new colleagues.

Dress Code: Business Casual

## **Technical Sessions – Monday 26<sup>th</sup>, Tuesday 27<sup>th</sup>, Wednesday 28<sup>th</sup> and Thursday 29<sup>th</sup>, 8 a.m. - 5 p.m.**

(With the exception for start at 1:30 p.m. on Monday and end at 4:15 p.m. on Thursday).

Oral presentations: The Symposium will offer 36 oral presentations, 20 minute presentations followed by 5 minutes for discussion.

Poster sessions: The symposium will offer 55 posters, distributed in two poster sessions. Authors of posters will present their work in 2 minutes presentation format on Tuesday (Poster session Even) and Wednesday (Poster Session Odd).

## **Young Professionals Event – Tuesday 27<sup>th</sup>, 6:00-11:00 p.m.**

Pau-Pyrénées Whitewater Stadium (French: Stade d'eaux-vives Pau-Pyrénées) is the home training facility for the French national canoe slalom team. It was first used to train the French team for the 2008 Summer Olympics in Beijing. In 2009, it was the first of three venues used in the canoe slalom World Cup.[1] It is also a whitewater park for recreational use by the general public.

- > A 5,000-m<sup>2</sup> stretch of water,
- > A competition course, an arrival pool and an initiation pool

We will be experiencing wild water rafting! Please bring your swimming suit! Wet suits will be provided if necessary. After this high adrenaline experience, we will enjoy a picnic on the riverside with local food and drinks.

As this is a sport event, there will be a 15min walk from the Palais Beaumont.

## **Visit of the log calibration center – Tuesday 27th, 6:00-9:00 p.m.**

Alternative logging is a cost responsible and innovative way to bring logging companies from diverse energetic domains into the oil and gas environment. By boosting the ecosystem of service companies and manufacturers in logging, Total E&P ASD has built a logging calibration facility to help suppliers to boost business opportunities.

Located in Artigueloutan, in the south-west of France, this Calibration Center is open to all oil and gas companies like manufacturers, service companies, IOCs, NOCs, but also to all energetic domains like hydrogeology, geothermic and mining.

The Center provides 29 standards in 18 silos: rocks, fluids, sand pack, aluminum and composite. These standards are used for the characterization of a large number of logging probes and metrological monitoring. The rock standards used in our workshop are carefully prepared following a certified drying and soaking process. Each rock is chosen for its mineralogical, geochemical and petro physical properties, a large range of lithology (11 types) as limestone, dolomite, sandstone...

Buses are arranged, departure from the Palais Beaumont conference center

## **Awards Gala Dinner – Wednesday 28<sup>th</sup>, 6:30 - 11:00 pm**

The gala dinner will be held in the gardens of the Villa Navarre hotel, located avenue de trespoey, 15 minutes' walk from the Palais Beaumont conference center. There we will enjoy some typical food and drinks from the region.

Dress code: (Smart) Casual dress code.

Gala Dinner is Kindly Sponsored by: iRock Technologies

# Accompanying Persons Tours and Activities

## Monday, August 26<sup>th</sup>

5:30 PM - Opening Reception

## Tuesday, August 27<sup>th</sup>

Departing from the Palais Beaumont at 8:00am and Returning at 4:00pm

### **Morning**

A panoramic guided tour of the city by bus followed by a visit to the castle where the “good King Henri” was born. With sections dating back 1000 years and a unique collection of tapestries, the castle is listed as a National Museum.

Lunch “Poule au pot” (chicken stew), the traditional Béarnaise dish. (as an option)

### **Afternoon**

Walking tour of the historic old quarter, around the castle and along the Boulevard des Pyrenees. Continue by bus to the Jurançon vineyards for a tour and some wine-tasting at a renowned winery.

## Wednesday, August 28<sup>th</sup>

6:30 PM – Gala Dinner

## Thursday, August 29<sup>th</sup>

Departing from the Palais Beaumont at 8:00 am and returning at 6:00 pm

### **Morning**

Meeting with your guide. Departure from Pau to Saint-Jean-de-Luz by the A64. Walking tour in Saint Jean de Luz: the traditional charming fishing harbour, its beautiful sandy beach in front of the ocean...

Lunch at the restaurant in a village of the Basque coast.

### **Afternoon**

Panoramic tour of Biarritz.

Continuation to Bayonne, visit of the port city, the cathedral...

Transfer to Pau.

## **Optional Field Trip – Friday August 30<sup>th</sup>, 8:15 a.m.- 6:00 p.m.**

The Ossau valley is the ideal site for a fieldtrip which deals with the reservoirs and the source rock of the Aquitaine oil and gas fields. The advantage of this option is that the transit time from Pau to the visited sites is short. Moreover, if the weather is good, the scenery is spectacular and allows various comments (Tectonic, glacier geomorphology etc.). However, we have chosen to focus our attention on subject related to cores interpretation showing (among other aspects) remarkable carbonates reservoirs, in two main stops: one in the morning requiring some walking effort, the other in the evening in the village of Arudy.

We propose to visit two sites that do not require special physical conditions. However adapted shoes are recommended, as part of the trip requires a short walk (3-4km) along natural tracks. This field trip should be combined with a light lunch (picnic style) to allow a full day entertainment. Due to the large spectrum of interest it may satisfy a wide range of people. And for those that do not want any more technical knowledge, Pyrenean Nature will be discovered by your visitors, in a relaxed atmosphere.

The field trip will include lunch.

## **Publication of Proceedings**

The proceedings are prepared in USB format and will be given at the Symposium to all registered participants. Additional USBs may be ordered the SCA web site:

[www.SCAweb.org](http://www.SCAweb.org)

The SCA has decided to no longer carry printed copies of the proceedings.

## Exhibition Hours

Sunday: 2:00 p.m. – 7:00 p.m.	*Exhibition Build-Up
Monday: 8:00 a.m. – 5:30 p.m.	*Exhibition Build-up starts at 8am
Tuesday: 8:30 a.m. – 5:00 p.m.	
Wednesday: 9:00 a.m. – 5:00 p.m.	
Thursday: 8:00 a.m. – 4:05 p.m.	*Exhibition Break-down can start after the afternoon break and complete by 6pm.

## Exhibitors

**AMETEK Chandler Engineering** – AMETEK Chandler Engineering produces the highest quality instruments and measurement systems for the Oil and Gas Industry. Our portfolio includes Quizix precision pumps used in core flooding (NEW models available!), SCAL, EOR, and other fluid delivery applications, the 6100 Formation Response (formation damage) systems, Core flood/EOR flow systems, custom core flow systems for Steady State/Unsteady State permeability measurements, and the Chandler 3000 Series PVT systems for phase behavior studies.

**Bruker microCT** - Bruker microCT develops and produces a wide range of high-end microtomography instruments for life science, material research and in-vivo preclinical studies.

The company is market-leader in the field of desktop micro-CT systems, bringing high-resolution 3D images straight to your desk.

In July, Bruker’s latest high resolution nanotomography system was launched: the SKYSCAN 2214 features up to 4 X-ray detectors, integrated in a maintenance-free and intuitive to use system.

**CYDAREX** - Since 2005, CYDAREX provides expertise in the domain of core and cuttings analysis. CYDAREX is a spin-off company of the French Institute of Petroleum (IFPEN), and is now a completely independent company. CYDAREX provides consulting and training services, commercializes laboratory and training equipment, and develops the software CYDAR™.

Teaching: CYDAREX commercializes a series of teaching equipment, designed to demonstrate flooding experiments (permeability measurements, two-phase flow, porous-plate and electrical experiments) in a rapid and safe laboratory setting.

Equipment: DarcyPress™ allows measurements of gas permeability under confining pressure on small rock samples (5 to 10 mm), with permeabilities ranging from 0.1 nanoDarcy to 10 Darcy. DarcyPress™ is ideal for measurements on shales. DARCYLOG™ allows measurements of permeability on drill cuttings, with sample size ranging from 1 to 5 mm, and permeability ranging from 0.05 to 100 mDarcy.

Software: CYDAR™ allows the design and the interpretation of all conventional and special core analysis experiments (MICP, Porous Plate, Rel Perms, centrifugation...). CYDAREX has recently implemented a module for Two-Phase Flow experiments with EOR (Enhanced Oil Recovery) capabilities for polymer flooding, low salinity, and surfactants injection experiments. CYDAREX is introducing an original porous plate device allowing measurements of gas or oil drainage Pc curves in less than one day. The main application is to replace mercury injection experiments for reservoir samples.

**DCI Corporation** - DCI offers innovative solutions to your core testing requirements. From turnkey systems to system components we can help you with your laboratory needs. DCI designs and manufactures both custom and standard core holders, accumulators, syringe pumps, acoustic separators, core flood systems, electrical resistivity systems, rock mechanics systems and much more. Stop by our booth to see how DCI can help you make better measurements on core properties.

**Dassault Systèmes** - Dassault Systèmes SIMULIA reveals the world we live in through realistic simulation of product, nature & life. We provide high-value end-to-end industry processes for digital engineering that employ state-of-the-art connected multidisciplinary-multiscale simulation applications. With SIMULIA, customers can reduce testing, increase confidence & quality, and get to market faster using always-available virtual worlds for discovery and testing. As an integral part of the 3DEXPERIENCE platform, SIMULIA applications connect directly to both design data and product requirements allowing simulation to power sustainable innovation at all stages of the product lifecycle. Our global team of simulation experts provides services, support, and training to help customers meet their business goals. [www.3ds.com/simulia](http://www.3ds.com/simulia)

**FloXlab** - Floxlab is an engineering firm specialized in the design and manufacture of an ample range of products encompassing advanced geotechnical testing equipment, high precision syringe pumps and compression frames. Whether a unique lab-scale unit or a complete turnkey system is required, our clients will benefit from our unrivaled depth of technological knowledge and experience as well as unparalleled customer service. With over 90% of our operations lying outside of France, Floxlab systems have become a standard in all major laboratories, with a strong presence in the U.S., Europe, the Middle East, China, and Russia. Our customers would agree that we are surely the world's foremost pump designer and manufacturer. Sectors benefiting from our devices' precision in pressure, volume and flow rate include: Petroleum research, reactant feeding, supercritical fluids, geoscience etc. At Floxlab, our philosophy is continuous improvement through constant market demand monitoring, higher quality material prospection, and meticulous customer feedback collection and analyses.

**GeoTek** - Geotek specialises in the non-destructive analysis of geological cores. We supply our range of Multi-Sensor Core Logger (MSCL) and X-ray CT systems that use multiple geophysical and geochemical sensors to rapidly and automatically gather measurements on sediment or rock cores. The rugged nature of the equipment makes it suitable for use in either an onshore laboratory/repository environment or onboard survey and drilling vessels. Stop by our booth and discuss our dedicated core plug CT system PlugXcan, and find out about our brand new system BoxScan, specifically designed to analyse your core trays accurately, automatically and efficiently.

**Green Imaging Technologies, Inc** – Green Imaging Technologies is the industry leader in NMR rock core analysis. Our software is the backbone of the GeoSpec line of NMR Rock Core Analyzers, which are used by all major oil producers, oil service companies and the most active research institutes worldwide. Our customers have access to exclusive, patented measurements including NMR capillary pressure and quantitative saturation profiles. For those that don't have their own laboratory, or service companies who want to add NMR to their product offerings, H2 Laboratories, a subsidiary of Green Imaging, leverages our expertise and patented technologies to offer NMR rock core analysis services both directly to customers, and via industry partners. Our team of experts are completely focused on rock core analysis, and as such have developed relationships with the most respected researchers and experts in the NMR rock core analysis field. At this year's SCA we will be showcasing new applications, including a new method for determining methane isotherms in shales and a technique to reducing sample heating during NMR measurements. Stop by the Green Imaging/Oxford Instruments booth in the exhibit hall to find out what is new in NMR rock core analysis.

**HOT Microfluidics GmbH** - HOT Microfluidics GmbH (HOT) is the leading provider of turnkey microfluidic solutions for IOR/EOR applications. The pioneering, fast and cost-effective Rock-on-a-Chip approach provides unmatched EOR process visualisation and chemicals screening capabilities and yields an unrivalled understanding of EOR processes, pore-scale oil mobilisation and trapping mechanisms.

**Math2Market GmbH** - Our vision is to replace laboratory analysis of material properties by material models and software. The mission is to offer a complete solution for Digital Rock Physics (DRP). For that mission, we develop our own software GeoDict and provide it to our clients together with hardware consulting, customized software development and support, and user training. The DRP suite of GeoDict is a purpose-built tool for the specific needs of core analysts. In combination with imaging capabilities, GeoDict enables you to perform the entire DRP workflow in-house, representing an alternative to service providers' solutions. GeoDict comprises a broad portfolio of DRP parameters, provides tools for the automation of workflows, and is offered as a service on request. In combination with its unmatched fast runtimes and low hardware requirements, GeoDict is designed to bridge the gap between "hand-made" and automated generation of DRP data.

**Object Research Systems** - Founded in 2004 and based in Montreal, Object Research Systems (ORS) Inc., develops advanced 3D visualization solutions used by research centers, engineering groups, and healthcare facilities to process, visualize, and analyze scientific and medical image data.

Our development team operates in compliance with ISO and IEC standards to ensure quality and processes that are reliable and reproducible.

Our partners rely on our products to extract the most value from their imaging system investments, to solve complex industrial and research problems, and to address medical imaging challenges. Our services range from product training to custom development and consulting and our software is deployed by registered users in more than 80 countries.

**Oxford Instruments** – Oxford Instruments will display the renowned GeoSpec line of NMR rock core analysers, including GeoSpec12 which offers ten times greater sensitivity and 100 times faster measurements on tight rocks and low porosity samples. The GeoSpec range measures standard core parameters such as pore size distributions, BVI, FFI, porosity, and T2 cut-off on a single instrument, and can perform advanced measurements such as capillary pressure and spatially resolved T2 distributions with the exclusive use of Green Imaging Technologies' software. We will also be available to discuss new applications such as gas isotherms, wettability and relative permeability.

**PanTerra** – PanTerra is an integrated laboratory, geosciences, and engineering consultancy serving the international oil and gas industry for more than 25 years. Our services include conventional and special core analysis, PVT, production chemistry, Enhanced Oil Recovery, subsurface evaluation and modelling, field development, souring studies, engineering and project management services. Capitalising on our in-house expertise, PanTerra also specialises in recruitment and secondment of subsurface professionals and additionally offers a unique blend of E&P learning customised to individual needs. For more information please visit [www.panterra.nl](http://www.panterra.nl) or connect via LinkedIn, Twitter and YouTube.

**Premier Oilfield Group** - WE ARE PREMIER - We believe the data-driven oil and gas industry is here, and that generating and sharing relevant data from rock and fluid samples is the key to more effective and efficient hydrocarbon development.

Premier Oilfield Group integrates reservoir rock and fluid measurements across multiple disciplines to deliver completions and reservoir solutions. Our proven workflows deliver timely, relevant data by doing the right experiments, doing those experiments right, and providing client-ready, fit-for-use results. We generate, aggregate, interpret, and deliver consistent, high-quality data that are of immediate value to oil and gas companies. We've assembled world-class experts, facilities, and platforms to produce that data, make it readily accessible, and help our clients share it effectively. These new ways of doing business set Premier apart from other testing-focused laboratories.

**Reactiv'IP** - Reactiv'IP offers to public and private research centers, software solutions to automate the analysis of their images. Our solutions allow users to replace a manual inspection or counting operation with a completely automatic operation. Thanks to our algorithms, our solutions can support very large volumes of 2D or 3D imaging data. These accelerations are made possible by the IPSDK library, flagship product of the company. IPSDK is used by a lot of major companies. Now, discover 'IPSDK Explorer' the new IPSDK GUI. This graphical interface will help you to use the IPSDK features effectively. In addition, IPSDK Explorer will automatically generate for you the Python scripts.

**Rotunda Scientific Technologies LLC** - Rotunda Scientific Technologies LLC provides innovative radiation measurement and protection products to the energy industry. This year we will be demonstrating the JCS GMS312 Rolling Gamma Spectrum Core Analyzer, which is based on the field proven design of the GMS310 Gamma Spectrum Core Logger handheld. Both the GMS310 and GMS312 are designed for core sample analysis (spectral gamma, API and Percent Concentration) in the rugged environment of the exploration site and will be available at our booth for you to evaluate. The latest firmware & software will provide enhancements to your operation. In addition to the GMS310 & GMS312 we offer many other state of the art radiation detection and protection products for use during exploration or nondestructive testing. Several of the radiation detection products are intrinsically safe for potentially explosive atmospheres. You are invited to see these products at our booth #5 during the SCA Annual Meeting. We look forward to meeting you for the first time or seeing you again and catching up.

**Spectra-Map** - Spectra-Map provides unique mineral analysis services to the upstream O&G sector, using visible and infrared reflectance imaging spectroscopy (IRS). IRS identifies a range of minerals including all clay polytypes, carbonates and sulphates, as well as solid and liquid hydrocarbons. It is well suited to analysis of cores, cuttings and plugs, generating continuous high density mineral data (at mm scale) without sample preparation or damage. Imaging provides the ability to see spatial relationships between different minerals and oils. The company has invested heavily in other spectroscopy techniques in order to expand our range of services, with a view to providing comprehensive non-destructive whole rock mineralogy on sub millimetre to metre scales.

**Strata Technology** – Strata Technology is one of the industry's leading specialist engineering companies. Strata designs, manufactures, commissions, inspects and maintains bespoke laboratory equipment, skid mounted rigs and pilot plants. Our equipment is used to undertake critical experiments into enhanced oil recovery, drilling operations and other Oil & Gas related research and development activities, where high pressure and high temperature are key requirements. In addition to the bespoke engineering services we offer, Strata's team of highly trained and skilled designers, engineers and technicians have developed a number of standard, CE Marked products including:

- DCP50 Pump – your ideal replacement to the Pharmacia P-500 for core preparation &

flooding applications

- Core Holders – off the shelf or bespoke designed solutions
- Piston Vessels – 0.5 to 4 litres capacity, operating at high pressures and temperatures

We are also the exclusive distributor of Quizix Pumps in the UK and France and the exclusive European distributor of Komax Systems's range of Static In-Line Mixers.

**Stratum Reservoir** – Stratum Reservoir supports energy resource investment and divestiture strategies worldwide through the analysis and interpretation of rocks and fluids. We specialize in reservoir characterization, laboratory services, and instrumentation designed to deliver scientific insights in upstream, midstream, and mining operations. In addition to software and equipment, we offer expertise in these areas:

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Some of the services we offer include: Routine Core Analysis, Special Core Analysis, Geochemical Analysis & Interpretation, Petrographic Analysis & Interpretation, Express Lab Services, PVT, EOR, and Storage Services

**Synergie4 / BRUKER Nano** - Synergie4, a French company created in 1994, is specialized in Electron Microscopy and high performance microanalysis systems (EDS, EBSD,  $\mu$ XRF, WDS). We provide installation, training and service on site for all our products since 25 years.

We are the official representative of Bruker Nano and  $\mu$ CT, Hirox, Denton Vacuum and Technoorg Linda:

- MICROANALYSIS (EDS, WDS,  $\mu$ XRF and EBSD) from Bruker Nano
- TABLE TOP ELECTRON MICROSCOPE (SEM) from Hirox
- X-RAY MICRO-CT from Bruker  $\mu$ CT-SkyScan
- COATING SYSTEMS from Denton Vacuum
- ION BEAM POLISHING SYSTEM (SEM-TEM) from Technoorg Linda
- SERVICE and TRAINING

We are continuously looking for the complete satisfaction of our customers by providing the best solutions and the service support.

**TESCAN XRE** - TESCAN's leading-edge 3D X-ray micro-computed tomography (micro-CT) systems are designed to meet application demands across a variety of fields by facilitating high performance 3D and time-lapse imaging methods. UniTOM, CoreTOM and DynaTOM are demonstrating leadership in dynamic CT, enabling high-speed tomography and materials evolution studies under various in situ sample environments. TESCAN XRE, a subsidiary of TESCAN ORSAY HOLDING (Brno, Czech Republic), was formed via acquisition of XRE NV in 2018 and is based in Ghent, Belgium.

**Thermo Fisher Scientific** – Thermo Fisher Scientific is the world leader in serving science. Our mission is to enable our customers to make the world healthier, cleaner and safer. Through our Thermo Scientific brand, we help customers accelerate innovation and enhance productivity.

Powerful and built for multi-scale, multi-modal data, providing built-in automated workflows and unique flexibility, Thermo Scientific™ PerGeos Software allows geoscientists and petrophysicists to visualize and analyze 2D/3D digital rock imagery, perform image-based simulations to improve reservoir quality evaluations and receive rapid insight into static and dynamic rock properties that impact production.

**Universal Medical Systems - A Merry X-Ray Company**– Universal Systems bring over 30 years of industry-specific experience providing computed tomography solutions for special core analysis. Ranging from Micro and Robotic CT for fluid flow, portable compact CT, and rapid multi-slice systems for general characterization. Universal delivers rock-ready, turnkey CT solutions. <http://www.universal-systems.com/>

**Vinci Technologies** - Vinci Technologies is a well-established engineering firm specializing in the manufacture of equipment for the Petroleum, mining and geology sectors. We operate in over one hundred countries and our clientele ranges from research universities to the most well-known service companies. The company comprises three business divisions, namely: Exploration & Production, Geophysical Tools and the Pilot Plants. We work in E&P field and the number of products that we offer exceeds 200. These are arranged in five major categories: Conventional Rock Analysis, Advanced Rock Analysis, Fluid Analysis, Geochemistry and Pumps.

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# Booth Layout

1. Vindum Engineering
2. Vindum Engineering
3. Green Imaging Technologies, Inc.
4. Oxford Instruments
5. Rotunda Scientific Technologies
6. AMETEK Chander Engineering
7. Strata Technology
8. Reactiv'IP
9. DCI Corporation
10. CYDAREX
11. HOT Microfluidics GmbH
12. Dessault Systemes
13. Spectra-Map Ltd
14. Math2Market GmbH
15. Object Research Systems
16. Universal Medical Systems
17. Thermo Fisher Scientific
18. Geotek Limited
19. PanTerra Geoconsultants B.V
20. Bruker micro-CT
21. Vinci Technologies
22. FloXLab
23. Premier Oilfield Group
24. Synergie4 / Bruker
25. TESCAN
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30. Stratum Reservoir



Sunday, Aug 25	
11:00 – 5:00	Optional Golf Event – Pau Golf Club

Monday, Aug 26	
8:00 – 5:00	Registration Desk Open

**Short Course Program**  
**Numerical History Matching of SCAL Data; Best Practice**  
**MONDAY, AUGUST**  
**26, 2019**

Numerical interpretation of data	
9:00 – 9:10	Welcome
9:10 – 10:40	Numerical Interpretation of Data  Presenters: Jos Maas & Jules Reed
10:40 – 11:00	Coffee Break  <b>Kindly Sponsored by: AMETEK Chandler Engineering</b>
11:00 – 12:30	Interpretation of Pore Scale Experiments; Alternative Descriptions of Porous Media Flow by Topological Means  Presenters: Ryan Armstrong & Steffen Berg
12:30 – 12:35	Closing Remarks
12:35 – 1:30	Lunch  <b>Kindly Sponsored by: TOTAL</b>

Short Course Kindly Sponsored by: Thermo Fisher Scientific

# Core analysis in a digital world

## Technical Program

Monday, August 26, 2018

1:30 - 1:45                      **Opening Remarks**

1:45 – 3:15                      **Session 1: Core Analysis in a Digital World (1) - Pore Scale**

**Chairs: Oliver Lopez and Josephina Schembre-McCabe**

SCA001                      Pore-scale imaging and determination of relative permeability and capillary pressure in a mixed-wet carbonate reservoir rock at subsurface conditions

Amer M. Alhammadi, Ying Gao, Takashi Akai, Martin J. Blunt, and Branko Bijeljic

SCA002                      Density Functional Hydrodynamics in Multiscale Pore Systems: Chemical Potential Drive

Oleg Dinariev, Nikolay Evseev, and Denis Klemin

SCA003                      Uncertainty span for relative permeability and capillary pressure by varying wettability and spatiality flow directions utilizing pore scale modelling

Thomas Ramstad, Anders Kristoffersen, and Einar Ebeltoft

3:15 – 3:30                      **Exhibitor Presentations (x5)**

3:30 - 3:45                      **Coffee Break**

**Kindly Sponsored by: AMETEK Chandler Engineering**

3:45 – 4:00                      **Exhibitor Presentations (x5)**

4:00- 5:30                      **Session 2: Improved SCAL Techniques and Interpretation (1)**

**Chairs: Derrick Green and Doug Ruth**

SCA004                      Permeability alteration by salt precipitation: numerical and experimental investigation using X-Ray Radiography

Olivier Lopez, Souhail Youssef, Audrey Estublier, Jostein Alvestad, Christin Weierholt Strandli

SCA005 Steady-State Two-Phase Flow in Porous Media: Laboratory Validation of Flow-Dependent Relative Permeability Scaling

Marios S. Valavanides, Matthieu Mascle, Souhail Youssef and Olga Vizika

SCA006 Improved method for complete gas-brine imbibition relative permeability curves

M. Ben Clennell, Cameron White, Ausama Giwelli, Matt Myers, Lionel Esteban, Michael Cullingford, William Richardson, Gavin Ward, Matt Waugh, Scott Cole, Ashley Hunt and Peter Bright

5:30 - 9:00

Opening Reception “Icebreaker Reception” – Restaurant “La belle Epoque”, Palais Beaumont

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Tuesday, August 27, 2018

8:00 – 5:00                      **Registration Desk Open**

8:30 - 10:00                    **Session 3: Wettability**

**Chairs: Steffen Berg and Josephina Schembre-McCabe**

SCA007                      Workflow for upscaling wettability from the nano- to core-scales

Maja Rücker, Willem-Bart Bartels, Tom Bultreys, Marijn Boone, Kamaljit Singh, Gaetano Garfi, Alessio Scanziani, Catherine Spurin, Sherifat Yesufu, Samuel. Krevor, Martin. J. Blunt, Ove Wilson, Hassan Mahani, Veerle Cnudde, Paul F. Luckham, Apostolos Georgiadis and Steffen Berg

SCA008                      Is contact angle a cause or an effect? – A cautionary tale

Douglas Ruth

SCA009                      The link between microscale contact angle measurements and corescale wettability

Chenhao Sun, James McClure, Mehdi, Shabaninejad, Peyman Mostaghimi, Steffen Berg and Ryan T. Armstrong

10:00 – 10:15                    **Exhibitor Presentations (x5)**

10:15 - 10:30                    **Coffee Break - Kindly Sponsored by: Thermo Fisher Scientific**

10:30 – 10:45                    **Exhibitor Presentations (x5)**

10:45 – 12:15                    **Session 4: Displacement Mechanisms/EOR/IOR (1)**

**Chairs: Jos Maas and Doug Ruth**

SCA010                      Effect of fractures on hot solvent injection in viscous oil: a study using HP-HT micromodel

Igor Bondino, Gerardo Emanuel Romero, Jean-Philippe Chaulet, Anne Brisset and Marelys Mujica

SCA011                      Screening of EOR potential on the pore scale by statistical and topological means

Holger Ott, Ahmad Kharrat, Mostafa Borji, Thorsten Clemens, Pit Arnold

SCA012 An experimental investigation of surface-modified silica nanoparticles in the injection water for enhanced oil recovery  
Alberto Bila, Jan Åge Stensen, and Ole Torsæter

**12:15 - 1:15 Lunch**

**1:15 – 2:45 Poster Session (Even Numbers)**  
**Chair: Christoph Arns and Ryan Armstrong**

**2:45 - 3:45 Coffee and Poster Session Break**  
**Coffee Break Kindly Sponsored by: Thermo Fisher Scientific**  
**Poster Session Kindly Sponsored by: Green Imaging Technologies, Inc. and Oxford Instruments**

**3:45 – 4:00 Exhibitor Presentations (x5)**

**4:00 – 5:30 Session 5: Pore Scale Imaging and Modelling (1)**  
**Chairs: Hendrik Roler and Steffen Berg**

SCA013 Permeability Prediction using multivariant structural regression  
Matthew Andrew

SCA014 A fast FFT method for 3D pore-scale rock-typing of heterogeneous rock samples via Minkowski functionals and hydraulic attributes  
Han Jiang and Christoph H. Arns

SCA015 Estimation of Gas Condensate Relative Permeability using a Lattice Boltzmann Modelling approach  
Josephina Schembre-McCabe, Jairam Kamath, Andrew Fager and Bernd Crouse

**6:00 – 11:00 p.m. Young Professional Event – Pau-Pyrenes, Whitewater Stadium**

**6:00 – 9:00 p.m. Visit to the Log Calibration Center**

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Wednesday, August 28, 2018

8:30 – 5:00            **Registration Desk Open**

8:30 – 10:00          **Session 6: Unconventionals and Shales (1)**

**Chairs: Ryan Armstrong and Jos Maas**

SCA016            Low permeability measurement on crushed rock: insights  
Sandra Profice, and Roland Lenormand

SCA017            Towards Relative Permeability Measurements in Tight Gas  
Formations  
Denis Dzhafarov, and Benjamin Nicot

SCA018            Storing CO<sub>2</sub> as solid hydrate in shallow aquifers: Electrical  
resistivity measurements in hydrate-bearing sandstone  
Jarand Gauteplass, Stian Almenningen, and Geir Ersland

**10:00 - 10:30          Coffee Break**

10:30 – 12:00        **Session 7: Pore Scale Imaging and Modelling (2)**

**Chairs: Oliver Lopez and Souhail Youssef**

SCA019            Multiphase flow imaging through X-ray microtomography:  
Reconsideration of capillary end-effects and boundary  
conditions  
Franck Nono, Peter Moonen, H el ene Berthet and Richard  
Rivenq

SCA020            Local Capillary Pressure Estimation Based on Curvature of the  
Fluid Interface – Validation with Two-Phase Direct Numerical  
Simulations  
Takashi Akai, Branko Bijeljic, and Martin Blunt

SCA021            Determination of Critical Gas Saturation by Micro-CT  
Steffen Berg, Ying Gao, Apostolos Georgiadis, Niels Brussee, Ab  
Coorn, Hilbert van der Linde, Jesse Dietderich, Faruk Omer  
Alpak, Daniel Eriksen, Miranda Mooijer-van den Heuvel, Jeff  
Southwick, Matthias Appel, Ove Bj orn Wilson

**12:00 - 1:00**

**Lunch**

**1:00 – 2:00**

**Session 8: Improved SCAL Techniques and Interpretation (2)  
- NMR**

**Chairs: Stefano Pruno and Matthias Appel**

SCA022

Inverted bucket centrifugation with fluorinated oils and its applications to T2 cut-offs

Ben Anger, Stefan Hertel, Keith Love, Michael Ehiwario, Matthias Appel

SCA023

A New Apparatus for Coupled Low-field NMR And Ultrasonic Measurements in Rocks at Reservoir Conditions

Paul R. J. Connolly, Joël Sarout, Jérémie Dautriat, Eric F. May, Michael L. Johns

**2:00 – 3:30**

**Poster Session (Odd Numbers)**

**Chair: Lesley James and Jules Reed**

**3:30 – 4:30**

**Coffee and Poster Session Break**

**Coffee Break Kindly Sponsored by: Thermo Fisher Scientific**

**Poster Session Kindly Sponsored by: Green Imaging Technologies, Inc and Oxford Instruments**

**4:30 - 5:30**

**Session 9: Core Analysis in a Digital World (2)**

**Chairs: Olga Vizika-Kavvadias and Christopher Arns**

SCA024

Defining a sample heterogeneity cut-off value to obtain representative Special Core Analysis (SCAL) measurements

Jos G. Maas, Niels Springer, and Albert Hebing

SCA025

Digital core repository coupled with machine learning as a tool to classify and assess petrophysical rock properties

Vanessa Hébert, Thierry Porcher, Valentin Planes, Marie Léger, Anna Alperovich, Bastian Goldluecke, Olivier Rodriguez and Souhail Youssef

**6:30 – 11:00**

**Gala Dinner – At Villa Navarre**

**Kindly Sponsored by: iRock Technologies**

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Thursday, August 29, 2018

8:30 – 4:30            Registration Desk Open

8:30 - 10:00           Session 10: Unconventionals and Shales (2)

**Chairs: Matthias Appel and Olga Vizika-Kavvadias**

SCA026            Using Capillary Condensation and Evaporation Isotherms to Investigate Confined Fluid Phase Behavior in Shales

Elizabeth Barsotti, Evan Lowry, Mohammad Piri, and Jin-Hong Chen

SCA027            Methane Isotherms and Magnetic Resonance Imaging in Shales

M. J. Dick, D. Heagle, D. Veselinovic and D. Green

SCA028            Dielectric Polarisation in Partially Saturated Shales

Paul R.J. Connolly, Matthew Josh, Keelan O'Neill, Eric F. May, Michael L. Johns

10:00 - 10:30           **Coffee Break**

10:30 – 12:00           Session 11: Displacement Mechanisms/EOR/IOR (2)

**Chairs: Souhail Youssef and Hendrik Roler**

SCA029            CT-scan in-situ investigation of waterflood front instabilities during immiscible displacements: effect of viscosity contrast and flow rate

Matthieu Mascle, Elisabeth Rosenberg, Berit Roboele, Espen Kowalewski, and Souhail Youssef

SCA030            Core-scale sensitivity study of CO<sub>2</sub> foam injection strategies for mobility control, enhanced oil recovery, and CO<sub>2</sub> storage

Zachary Paul Alcorn, Sunniva B. Fredriksen, Mohan Sharma, Tore Føyen, Connie Wergeland, Martin A. Fernø, Arne Graue, and Geir Ersland

SCA031            New laboratory core flooding experimental system for EOR surfactant screening, especially for foam

Xuesong Li, and Matthias Appel

**12:00 – 12:30 Business Meeting**

**12:30 - 1:30 Lunch**

**1:30 – 3:00 Session 12: Laboratory Core Analysis**

**Chairs: Stefano Pruno and Matthias Halisch**

SCA032 A new CEC measurement proxy using high-frequency dielectric analysis of crushed rock

M. Rebecca Stokes, Z. Elton Yang, Prince Ezebuoro, and Timothy Fischer

SCA033 Gas Slippage in Partially Saturated Tight Rocks and During Drainage

Alexandra Amann-Hildenbrand, Mohammadebrahim Shabani, Thomas Hiller, Norbert Klitzsch, Norbert Schleifer, and Bernhard M. Krooss

SCA034 Modeling Permeability in Carbonate Rocks

Moustafa Dernaika, Shehadeh Masalmeh, Bashar Mansour, Osama Al-Jallad, and Safouh Koronfol

**3:00 – 3:30 Coffee Break**

**3:30 - 4:30 Session 13: Improved SCAL Techniques and Interpretation (3) - NMR**

**Chairs: Matthias Appel and Derrick Green**

SCA035 Direct Magnetic Resonance Measurement of Average Pore Size

Florin Marica, Armin Afrough, Derrick Green, Laura Romero-Zeron, and Bruce Balcom

SCA036 Two-Phase Fluid Flow Experiments Monitored by NMR

Thomas Hiller, Gabriel Hoder, Alexandra Amann-Hildenbrand, Norbert Klitzsch, and Norbert Schleifer

## Alternate Orals

SCA037	<p>Transport properties of the Cobourg Limestone: A benchmark investigation</p> <p>C. A. Davy, Zhazha Hu, A.P.S. Selvadurai, Jop Klaver, M.-C. Willemetz, F. Agostini, F. Skoczylas, Jan Dewanckele, Alexandra Amann-Hildenbrand and Roland Lenormand</p>
SCA038	<p>Pore-scale experimental investigation of in-situ wettability and displacement mechanisms governing WAG in oil-wet carbonates</p> <p>Ziqiang Qin, Maziar Arshadi, and Mohammad Piri</p>
SCA039	<p>High-resolution inline density measurements: insight on multiphase flow and transport phenomena in porous media</p> <p>Jelayne Falat, Adam Fehr, Ali Telmadarreie, and Steven Bryant</p>
SCA040	<p>Pore-scale experimental study of carbonated water injection in an oil-wet carbonate: an improved insight into wettability alteration and displacement mechanisms</p> <p>Ziqiang Qin, Maziar Arshadi, and Mohammad Piri</p>
SCA041	<p>The digital rock analysis of biogenically induced reservoir heterogeneities in Cretaceous reservoirs of Saudi Arabia</p> <p>Ivan Deshnenkov, and Camilo Polo</p>
SCA042	<p>Novel technique to measure mutual bulk fluid diffusion using NMR 1-D gradient</p> <p>Son Dang, Carl Sondergeld, and Chandra Rai</p>

SCA043	A Surface Complexation Model of Alkaline-Smart Water Electrokinetic Interactions in Carbonates  Moataz Abu-Al-Saud, Amani Al-Ghamdi, Subhash Ayirala, and Mohammed Al-Otaibi
SCA044	Effects of gas pressurization on the interpretation of NMR hydrocarbon measurements in organic rich shales  Son Dang, Carl Sondergeld, and Chandra Rai

## Posters Presentations / Abstracts

SCA045	CAUSAL PROTOCOLS TO ASSESS THE VIABILITY OF NATIVE STATE OR RESTORED STATE PREPARATION  Jules Reed, Stefano Pruno, Izaskun Zubizarreta, Rolf Solheimdal Johansen
SCA046	Validation of Simulated Relative Permeability Estimates in Very Low Permeability Rocks  Nick Drenzek, Ryan Antler, Shawn Zhang, James Howard
SCA047	Composite Core – An Experimental Approach in Evaluating Ordering Criteria for Individual Cores in Composite  Edison Sripal, Lesley James
SCA048	Impact of Brine Spontaneous and Forced imbibition on effective permeability in gas shales  Denis Dzhafarov, Benjamin Nicot
SCA049	A new approach to measure the wettability of porous media under different saturation conditions by Temperature Sensitivity of Nuclear Magnetic Resonance Relaxation Time  Hyung T. Kwak and Jun Gao
SCA050	Wettability - Combine the macroscopic approach to pore-scale analysis  Prisca Andriamananjaona, Peter Moonen, Manuel Chamerois, Richard Rivenq

SCA051	Lithologically Controlled Core-Log-Geocell Integration Using Probabilistic Multivariate Clustering Analysis and an Expert System A. A. Curtis, E. Eslinger, S. Nookala, and F. Boyle
SCA052	An experimental and digital investigation into the impact of diagenesis above and below the oil-water contact Francis Mujica, Lesley A. James, Carl F. Berg and Derek H. C Wilton
SCA053	Optimizing Magnetic Measurements on Drill Cuttings for Reservoir Characterization Michael Bik and David K. Potter
SCA054	Automated Determination of Formation Porosity from Drill Cuttings using Nuclear Magnetic Resonance Joel BILLIOTTE, Mahdi Ammar, Karim Bondabou and Jerome Breviere
SCA055	Hele-Shaw setup for investigation of two-phase flow in fractures Martin Raphaug, Per Bergmo, Alexandre Lavrov, Bård Bjørkvik, Cathrine Ringstad
SCA056	A Review of Effects of Bedding Plane and Anisotropy on Indirect Tensile Strength Test of Rocks Dee Moronkeji, Richard Shouse and Rolando Lew
SCA057	Pore scale visualization of Improved Sweep Efficiency During Fines Assisted Low-salinity Waterflooding Using Micro-CT Imaging Yamin Wang, Muhan Yu, Furqan Hussain
SCA058	New method for characterising the nano- to macro-scale voidage within black shale and for modelling shale gas recovery efficiency G. Peter Matthews, Katie L. Jones and G. Maurizio Laudone
SCA059	Pore Structure Impact on Polymer Retention in Carbonate Cores Abdulkareem M. AlSofi, Jinxun Wang, Abdullah M. Boqmi
SCA060	Automated Quantitative Micromodel Image Analysis Applied to High-Pressure CO <sub>2</sub> Foam Injections T. L. Føyen, J. Gauteplass, Ø. Eide, M. A. Fernø

SCA061	Reducing Sample Heating During NMR Measurements M. J. Dick, D. Veselinovic, and D. Green
SCA062	Modeling carbonate microfractures with the lattice Boltzmann method Andrew Fager, Bernd Crouse, David Freed, Josephina Schembre-McCabe, Neil Hurley
SCA063	Microscale interactions of EOR chemicals at the crude oil-water interface and their implications for oil recovery Zuoli Li, Zhenghe Xu, Subhash Ayirala and Abdulkareem AISofi
SCA064	Robust and Efficient Evaluation of Oil/Water Contact Angles and Wettability Alteration Using a Modified Washburn Method Alhasan B. Fuseni, Ziyad Kaidar, Abdulkareem M. AISofi
SCA065	In-situ Characterization of Mixed Wettability in Carbonate Rock: A Cryo-BIB-SEM Approach A. Gmira, S.M. Enezi and A. A. Yousef
SCA066	Core-Based Diagnostics of Sanding Prone Pay Zones in the Ordovician Sarah Sandstone Reservoir, Northern Saudi Arabia M. S. Ameen, A. Y. Coulibaly, A. Rees, and L. Jihong
SCA067	A Pore-Level Analysis on Residual Oil Structure post Secondary and Tertiary Displacements Lyla, AlMaskeen; Felix Servin, Jesus; AlAseeri, AbdIrahman; AISofi, Abdulkareem
SCA068	Application of digital petrophysics to Brazilian pre-salt carbonate rock: comparative study on two different facies Titly Farhana Faisal (TOTAL and INRIA), Rodolfo Victor (PETROBRAS), Rodrigo Surmas (PETROBRAS), Igor Bondino (TOTAL)
SCA069	Digital Core-Enabled High-Resolution Formation Evaluation via Coupled Physics and Data Analytics Nicholas Drenzek, Ryan Antle, Haifeng Jiang, Siddharth Misra

SCA070	Metre scale gas-brine coreflood investigation of plume mobility and trapping Michael B. Clennell, Cameron White, Ausama Giwelli & Matt Myers
SCA071	The role of heterogeneous wettability for hydrocarbon production from imbibition in a mixed multiporous carbonate reservoir rock investigated by magnetic resonance techniques Jun Gao, Hyung T. Kwak
SCA072	Adsorption isotherm for wettability evaluation Dmitry Korobkov, Vera Pletneva
SCA073	Petrophysical Parameter Prediction Utilizing Limited Core Training Data Ana Maria Naranjo Pacheco and David K. Potter
SCA074	Effects of Temperature on Fines Migration during Low Salinity Water Injection Yamin Wang, Muhan Yu, Furqan Hussain
SCA075	Methane Production through Combined Depressurization + Hydrate Swapping method in the Sandy Porous Medium under Permafrost Temperature Conditions Jyoti S Pandey, Nicolas von Solms
SCA076	Impact of Micro-Emulsion Phase Behavior on Near Wellbore Associated Emulsification Properties during Chemical Enhanced Oil Recovery Marwah M. Alsinan, Debora Salomon Marques, Hyung T. Kwak, Alhasan B. Fuseni
SCA077	Combination of computed X-ray tomography and triaxial geomechanical tests as a tool for fracture propagation prediction Edyta Puskarczyk, Paulina I. Krakowska, Marek Dohnalik
SCA078	Slip-flow in tight carbonate for permeability estimation using 3D digital pore space Krakowska P., Madejski P., Puskarczyk E., Habrat M.

SCA079	<p>A FAST AND DIRECT RCAL METHODS ON AS-RECEIVED BRAZILIAN PRE-SALT CARBONATES CORES</p> <p>Leonardo Goncalves; Plinio Cancio Rocha Da Silva Junior; Glenio Rosinski Ribeiro; Bernardo Coutinho Camilo Dos Santos; Willian Andrighetto Trevizan</p>
SCA080	<p>Comparing the porous plate technique and the evaporation technique for establishing initial water saturation</p> <p>Lykourgos Sigalas, Hanne Dahl Holmslykke, Dan Olsen</p>
SCA081	<p>Digital Rock Model based on nCT images as an input to Deep Learning for permeability simulation</p> <p>Edyta Puskarczyk, Paulina I. Krakowska, Magdalena Habrat, Paweł Madejski, Mariusz Jędrychowski</p>
SCA082	<p>Simulation and Experimental Measurements of Internal Magnetic Field Gradients and NMR Transverse Relaxation Times (T2) in Sandstone Rocks</p> <p>Paul R. J. Connolly, Weichao Yan, Daniel Zhang, Mohammed Mahmoud, Michael Verrall, Maxim Lebedev, Stefan Iglauer, Peter J. Metaxas, Eric F. May, Michael L. Johns</p>
SCA083	<p>Computed X-ray tomography data in multiple linear regression analysis on tight rocks for permeability estimation</p> <p>Krakowska P., Puskarczyk E., Madejski P., Habrat M., Dohnalik M.</p>
SCA084	<p>Laboratory core analysis of potentially in-situ recovery amenable sandstone-hosted uranium deposits in the Morrison Formation/New Mexico/USA</p> <p>Micha Janosch Zauner, Matthias Halisch, Andreas Weller</p>
SCA085	<p>Core Fracture Segmentation in CT Images by Transfer Learning</p> <p>Ryan Antle, Mackenzie Dreese</p>
SCA086	<p>STUDY OF THE EFFECTS OF NaCl REDUCTION IN OIL RECOVERY DURING THE CALIBRATED WATER INJECTION INTO DOLOMITE ROCKS</p> <p>Carlos A. Rivas, Alessandra Winter, Osvaldo V. Trevisan (In memoriam)</p>

SCA087	PORTABLE XRF SPECTROMETER AS A FORMATION EVALUATION AND GEOSTEERING TOOL APPLIED IN THE POLISH PERMIAN BASIN Rafał SKUPIO Urszula ZAGÓRSKA, Benedykt KUBIK, Sylwia KOWALSKA, Krzysztof WOLAŃSKI
SCA088	Emulsification under different mixing conditions Pit Arnold, Ahmad Kharrat, Barbara Schnöpf and Holger Ott
SCA089	Pore-scale characterization of Norwegian Continental Shelf Reservoir based on Digital Rock Simulation Fatime Zekiri, Pit Arnold, Jan Steckhan, Holger Ott
SCA090	The Impact of Microbial Growth on Hydraulic Properties in Saturated Porous Media Holger Ott, Neda Hassannayebi, Frieder Enzmann, Johanna Schritter, Martin Fernø, Andreas Loibner
SCA091	Improving oil recovery by injecting alcohol-treated CO <sub>2</sub> Saira Saira, Emmanuel Ajoma, Furqan Hussain

Poster Program is kindly sponsored by: Green Imaging Technologies, Inc. and Oxford Instruments

Friday, August 30th	
8:15 a.m. – 6:00 p.m.	Optional Field Trip. Bus for the field trip leaves from the conference center Palais Beaumont, meeting at 08.15. We will be back at the Palais Beaumont 17.30-18.00

- Delegate Bags kindly sponsored by Vindum Engineering
- Lanyards kindly sponsored by Green Imaging Technologies and Oxford Instruments
- Pens and Pads kindly sponsored by Strata Technology

# Notes

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