SCANews

The SOCIETY of CORE ANALYSTS

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Message from the President

*by **Ivar Erdal***

Dear Colleagues,

It is an honour for me to serve the SCA as President for the term 2007-2008. For those of you attending the meeting in Calgary it was obvious to see the importance of the Society, where members can meet and discuss, share scientific ideas and advances and make plans for the future work to be done. The Symposium in Calgary was very well organized, with a well structured technical program, many excellent papers and posters being presented, vendor presentations and excellent meals and activities, including two field trips. I want to express my sincere thanks to all who contributed to make this Symposium a success, and especially to the Local Organizing Committee with Apostolos Kantzas as VP Arrangements. Further, I would like to thank David Potter for his hard work in organizing the technical program as VP Technology. I would also like to thank the sponsors of the Symposium; their valuable contribution makes the organization of the Symposium much easier and keep the Society alive and in a healthy financial situation.

Next year's meeting will be in Abu Dhabi, and I am happy to tell the members that the planning is well ahead and in very good hands with Waddah Al Hanai being VP Arrangements. The Symposium will be held in the period October 29 – November 2, so please pencil in these dates today! Then, please take your time to prepare and submit an abstract for the Symposium, due date is February 1.

Thanks a lot to all SCA members for your support and contribution to the Society throughout 2007 and I wish you all the best for 2008!

Photo: Ivar Erdal

Note from the VP Technology

*by **Gary Sinclair***

Call for Abstracts – Symposium 2008

Dear SCA Members,

Firstly can I just say it is a an honour and a pleasure to have been elected VP Technology for 2008 and I look forward to seeing as many of you as possible in Abu Dhabi next year.

The 22nd International Symposium of the Society of Core Analysts will take place on 29th October – 2nd November 2008 in Abu Dhabi, U.A.E. The conference will consist of a 1 day workshop on October 29th followed by 3 days of technical sessions (including both oral and poster presentations) on October 30th, 1st and 2nd November. There will be no technical sessions on Friday October 31st but the local organizing committee will be arranging optional visits and sightseeing. The SCA website at http://www.scaweb.org/ will provide further details as they become available.

The Symposium Theme is **"Challenges in Carbonates and Solutions for Field Development"**. This theme is of course appropriate for the Middle East and we would like you to keep the theme in mind as you prepare your abstracts.

The SCA Technical Committee invites abstract submission for oral presentations and posters for the following proposed topics/themes:

1. Case Studies – applied core analysis, integrated studies
2. Improved SCAL Techniques and Interpretation
3. Wettability-Determination/Restoration-Practices and Recommendations
4. Displacement Mechanisms - understanding the key reservoir processes
5. Reservoir Characterization –including sample characterization and selection, scale of measurement, optimizing test design in carbonates
6. Pore Scale Imaging and Modelling
7. SCAL aiding the understanding of IOR/EOR and injection processes
8. Other. (If your paper does not fit directly into any of the above then please suggest an alternative topic/theme)

Abstracts are due no later than 1st February 2008 and should be submitted using the electronic submission form on the SCA website.

http://www.scaweb.org/symposium_2008_callforabstracts.shtml

Please note only abstracts submitted using the electronic form will be considered for the Symposium. Authors will be notified of acceptance by mid March 2008. If you require any further information regarding abstract submission or the proposed technical topics/themes please contact me at gary@elreslab.com

The technical committee for the 2008 Symposium has been formed and the members are listed below. I would like to thank all those on the committee for volunteering their valuable time to review the abstracts and subsequent papers. Their efforts will ensure that we have another high quality set of technical sessions.

On behalf of the Technical Committee I look forward to receiving your abstracts and look forward to another successful event in Abu Dhabi.

SCA Technical Committee for the 2008 Symposium

Waddah Al Hanai - ADNOC
Cliff Black - BP
Dave Bowen - Core Laboratories
Ted Braun - ExxonMobil
Jill Buckley - New Mexico Tech.
Jean-Baptiste Clavaud - Chevron
Louis Cuiec - Institute Francais du Petrole
Patrick Egermann - Gaz de France
Ivar Erdal - Numerical Rocks
Tom Fate - Chevron
Marc Fleury - Institute Francais du Petrole
Mostafa Fourar – Ecole des Mines de Nancy
Gerald Hamon – Total
Matt Honarpour – ExxonMobil
Xu-Dong Jing - Shell
Apostolos Kantzas – University of Calgary
Mark Knackstedt – Australian National University
Roland Lenormand - Cydarex
Craig Lindsay – Helix RDS
Jos Maas - Shell
Dan Maloney – ConocoPhillips
Shehadeh Masalmeh - Shell
Norman Morrow – University of Wyoming
Bård Ottesen - ResLab
David Potter – Herriot-Watt University
Gary Potter – Core Laboratories
Jon Knut Ringen – Statoil
Doug Ruth – University of Manitoba
John Shafer – Reservoir Management Group
Gary Sinclair - ResLab
Bob Smits - Shell
Ole Torsæter – Norwegian University of Science and Technology
Olga Vizika-Kavvadias - Institute Francais du Petrole

SCA Survey VP Membership

*by **Bas Schipper***

The SCA Survey
The purpose of the SCA survey is to determine whether the SCA still meets the objectives on which it was founded. (See: http://www.scaweb.org/about_objectives.shtml).

You are kindly requested to fill out the questionnaire as soon as possible but preferably before the 9th of January. By all means your data will be processed and evaluated anonymously and will serve SCA purposes exclusively.

When the survey is completed you will be informed about the overall result i.e. to determine in which areas we can improve our membership. Your participation is very important! Only a high participation rate leads the Board to understand what's important for the members and to make sound data-driven decisions when required to do so. Please take 2 minutes of your time and go to: http://www.thesistools.com/?qid=41121&ln=eng

Thank you for your cooperation and commitment!

On behalf of the Board of Directors of the Society of Core Analysts Bas A. Schipper VP Membership

Please contact Bas Schipper for questions about the survey (webmaster@scaweb.org)

Best Papers and Posters – 2007 Symposium

*by **David Potter***

Dear SCA Members,

The SCA2007 Technical Committee members completed their final task shortly after this year's symposium. Each member of the committee at the symposium was asked to give a score for each paper and poster (on a scale from 1 to 10). An average score for each paper and poster was then determined. These scores identified the following best papers and posters from the 2007 Symposium in Calgary, Canada:

Best papers:

The Best Paper Award goes to:

SCA2007-05: D. K. Potter and O. P. Ivakhnenko: **"Clay Typing - Sensitive Quantification and Anisotropy in Synthetic and Natural Reservoir Samples using Magnetic Susceptibility for Improved Petrophysical Appraisals."**

Second best paper:

SCA2007-36: J.C. Stevens, B.A. Baldwin, A. Graue, G. Ersland, J. Husebø and J. J. Howard: **"Measurements of Hydrate Formation in Sandstone."**

Third best paper:

SCA2007-03: H. A. Kelleher, E. M. Braun and B. E. Milligan: **"Wettability Restoration in Cores Contaminated by Fatty Acid Emulsifiers."**

Best posters:

The Best Poster Award goes to:

SCA2007-51: V. S. Suicmez, M. Piri and M. Blunt: **"Surprising Trends on Trapped Hydrocarbon Saturation with Wettability."**

Second best poster:

SCA2007-52: S. Al Enezi, A. S. Grader and P. M. Halleck: **"Effects of Shear-Fracture Displacement and Orientation on Fracture Topology and Absolute Permeability."**

Third best poster:

SCA2007-50: E. Rodriguez and S. L. Bryant: **"Trapping of fine particles in gaps in porous media."**

I congratulate the authors of the above papers and posters, and thank all the other authors for their contributions to a successful symposium. The three Best Papers from both the Calgary SCA2007 and Trondheim SCA2006 symposia are being published in a special issue of the journal Petrophysics, which is currently scheduled for February 2008. We have had tremendous support from the Editor of Petrophysics, James Howard, for this special issue.

Finally, I would like to thank all the SCA2007 Technical Committee members for their hard work in the last year in reviewing and ranking the initial abstracts and full papers.

Note from the VP Arrangements

*by **Waddah Al Hanai***

2008 SCA Symposium
Abu Dhabi, United Arab Emirates
October 29 – November 2, 2008

In the year 2000 and again in the year 2004, Abu Dhabi has hosted the SCA Symposium. In keeping with this "every 4 years tradition", the SCA Symposium for 2008 will again be held in Abu Dhabi.

The Abu Dhabi meetings have been very successful, due to the facts that:

1. Commitment from the highest levels in the oil and gas industry has been very strong. For example, ADNOC and its operating companies (ADCO, ADMA-OPCO, ZADCO), the regional offices of the IOCs, and the Service Companies have all been very generous in supporting and sponsoring the SCA Symposia held in Abu Dhabi in 2000 and 2004. There is no reason to expect the euphoria of success of the past SCA Symposia held in Abu Dhabi to wane in 2008.

2. The Local Organizing Committee has gained even deeper skills and a broader experience in preparing for the event. The LOC represents the wide spectrum of the oil and gas industry in Abu Dhabi.

3. The sub-surface professionals of the oil and gas industry in the Middle East region as a whole find in the SCA the purgatory for the sins committed in Carbonate reservoir characterization; both rock and its fluids! Efforts to design for Carbonate reservoir data gathering, data measurement, and data analysis and interpretation require special attention altogether. The sub-surface complexity (heterogeneity, anisotropy, faults, fractures, …etc) and subtle issues (wettability and its distribution) in Carbonate reservoirs are striking, yet very little attention had been given to carbonate reservoir characterization until the SCA started holding its symposium in Abu Dhabi, the cradle of Carbonate reservoirs. That is why the zeal of the Carbonate sub-surface professionals for the Abu Dhabi SCA Symposium is high, bringing record-breaking attendance.

The Year 2008 SCA Symposium is therefore expected to capitalize on the tremendous success of the 2000 and 2004 symposia. Another source of strength for the 2008 SCA Symposium is that it is held in tandem with the Wettability Conference (October 27-28) and the SPE Abu Dhabi International Petroleum Exhibition and Conference (ADIPEC), scheduled for November 3-6, 2008. This arrangement of holding the three important events back-to-back is convenient for professionals from overseas to attend the three events by making a single trip.

The 2008 SCA Symposium and the Wettability Conference will both be held at the Rotana Beach Hotel and Resort. Relevant information can be found in the SCA web-site.

We are looking forward to meeting you again in Abu Dhabi.

Photo: New Abu Dhabi

Gerald Hamon
Recipient of the 2007 Darcy Award for Technical Achievement

Gerald Hamon was the recipient of SCA's 2007 Darcy Award for Technical Achievement. The following introductory speech by Bob Smits and the acceptance speech by Gerald Hamon were presented at SCA's 2007 Symposium in Calgary.

Photo: Gerald Hamon

Introductory Speech for Gerald Hamon
*By **Bob Smits***

"Ladies and Gentlemen,

As Past President of the SCA, I want to introduce Gerald Hamon, who is the winner of the 2007 Technical Achievement award, nowadays called the Darcy Award.

Gerald is currently expert for Petrophysics with TOTAL. Let me give a brief biography of him, before I give the word to him.

Gerald graduated in 1976 in Lyon. Henry Darcy lived, worked and published his famous equation a bit more than 150 years ago (namely in 1856) in the city of Dijon, which is not too far away from Lyon. So, maybe Darcy's spirit still hovers over this region.

After an exciting two years period in Senegal, where he worked in very remote villages, Gerald earned his PhD in 1980.

In 1980, Gerald joined ELF (which at that time still was a separate company) as a research engineer in the Core Analysis group. After merging with TOTAL, it was first called TotalFinaElf, but now its just called TOTAL, because what can be more total than TOTAL ?

From 1986 to 1995, Gerald worked in a variety of senior technical positions.

In addition, Gerald has been very active in our Society. He served as a member of the SCA technical committee since 1997. Gerald has presented many papers. Also, he is always very active in the discussions after the presentations.

Gerald also plays his part in developing new professionals. He co-supervised seven PhD students to date and teaches courses in TOTAL as well as in several universities in France.

Last but not least, Gerald authored or co-authored thirty-five SCA, SPE and IOR conference papers on a great variety of topics related to flow characteristics.

So, it's very fitting that Gerald gets the Darcy award, as Darcy started this kind of investigation into flow characteristics. We

hope to see many more contributions by Gerald in the coming years.

Gerald, congratulations, and good luck in the future."

Technical Achievement Award from the Society of Core Analysts, Calgary, 2007
by ***Gerald Hamon***

"I am profoundly moved by the honours bestowed on me today by the Board of Directors of the Society of Core Analysts and I would firstly like to express my thanks. I wish to thank TOTAL for giving me the opportunity and the support to work on petrophysics and recovery processes. I would also like to associate my colleagues from TOTAL with this distinction, along with all the students who accepted to study for a PhD under my supervision, and anyone in the audience, particularly researchers in the academic world, with whom I have had so many profitable discussions over the years.

I am very touched, having looked over the SCA website and seen the names of all the people who have previously received this award. I recall the long list of their works and the hours spent reading these papers that taught me so much, by Bob Blackwell, Louis Cuiec, Norman Morrow, Jill Buckley, George Hirasaki and Ken Sorbie, to name but a few. It is with much humility that I receive this award.

I am very touched by this distinction because I have strong links with core analysts and the Society of Core analysts. That is where my roots lie, ever since joining the industry in 1979.

My first post in the oil industry was in the Petrophysics laboratory at ELF. It was a passionate era, and we were working eight days a week. Any new ideas to improve recovery were welcomed, no matter how crazy they were. Along with surfactant and polymer injection, we also explored very unconventional techniques such as pressure pulsing core samples to try to recover residual oil.

Afterwards, I left the laboratory and, for 10 years, I dove into the world of reservoir engineering. Reservoir engineers are the precursors of the virtual worlds, before the PlayStation, the Xbox or Second Life. As with computer games, these virtual worlds have become more and more complicated as Intel created more powerful processors, but they remain nonetheless virtual.

However geophysicists, geologists, reservoir engineers were all creating these digital worlds in a different way in the 80's. Each was thinking that they held the most important information or that the explanation for what they did not understand in this damned reservoir was held by one of the others.

We learned how to work together in the 80s. If you don't believe me, just remember the number of articles published by the Society of Petroleum Engineers whose title started with "a multidisciplinary approach"? I believe that all young people joining the geosciences today should not forget that we could work so well all together.

The first things that I learnt as a young reservoir engineer is that, as far as data acquisition is concerned, you can't always get what you want, and the second thing that I learnt is that core data is just like another brick in the wall. Today, despite my visceral attachment to core sample measurements and with all respect to the SCA, I must say that core sample measurements are at best but a fragment of the truth of a reservoir. But this parcel of truth is precious, sometimes more than others: It is of course the role of the core analyst and the reservoir engineer to decide together the interest of each type of measurement according to the reservoir characteristics and maturity, but also with robustness and the precision of available techniques relative to the challenge. In that

perspective, we must also encourage multiple learning competencies.

The reservoir engineer who assists in discussions with core analysts is sometimes dazed and confused by the difference in results between various experimental techniques and the absolute conviction of each of the participants that their method is the best. In my opinion the community of core analysts gains even more credibility each time they clarify the strengths and weaknesses and the domains of applications of each laboratory technique.

In the last few minutes that remain I would like to reflect on the future of core sample measurements, which are so precious to everybody in this audience:
Are we at the brink of a technological upheaval where imaging, digital reconstruction and modeling of pore network will provide us with porosity, permeability, capillary pressure, formation factor, mechanical properties and relative permeabilities? Probably so, and it's a path I've defended over the past 10 years by financing research projects in several universities. However, I am not totally convinced of our real prediction capacities. I have no worries about our growing capabilities in imaging porous material: have our camera receptors not grown from 500,000 pixels to over 12 million pixels in just a few years? However I am much more perplexed by our aptitude in predicting wettability and its distribution in a porous network or in tackling three phase flow. The road will be long.

Anyway, this is one approach that will help us to decipher the long procession of contradictory observations and rules of thumb. Since 1936 and Mr. Hassler, we explored multiphase flow by core tests. Since the late 70's we applied macroscopic simulation to core floods. But this approach has often attained its limits because the majority of our observations have multi-factored origins. There must be some other way.

This new approach offers the possibility of remedying the known weaknesses in macroscopic laws that we use, for instance the relative permeabilities or the Archie law. Along with Igor Bondino and Steve McDougall, I have illustrated the benefit of these techniques to the depletion of critical or extra heavy oils. Igor recently managed to directly compare, at the same scale, experimental results against digital network simulations incorporating millions of pores. I hope that it will soon be possible to combine the richness of the description of flow at the scale of pores, realistic descriptions of porous networks and of wettability and the scale of core samples.

I tell all young engineers who have joined us over the past 4 years that this is a very exciting time. With high oil prices, the industry is once again engaging to improve microscopic recovery. This is a huge opportunity for today's core analysts. Firstly, we discovered several years ago, along with Norman Morrow and Tor Austad, that we didn't know everything about water injection. Then we explored once more, injections of surfactants, alkalines, polymers and other processes such as injection of air, vapex and enhanced steam assisted gas drive. And each day, the most recent news about the global warming give even more weight to CO2 sequestration projects.

From core samples to pilots, passing by complex modeling, these intellectual perspectives are much more exciting than those of the 90s, where the only key word was 'cost reduction'. A three-fold challenge is ahead of us: firstly we must exhume the experience that we gained in the 80's and attach to it new ideas and the dynamism of young geoscientists Secondly, you might conclude that all EOR pilots of the 80's were successful when reading the SPE papers, but do you know people who publish when things turn wrong? We will therefore be

confronted by complex physics which will necessitate experimentalists and theoreticians. Finally, an important part of the current portfolio of the oil companies is now composed of offshore fields, and even deep offshore fields, with large well spacings and high risk. If we combine these parameters with the recent explosion in operation costs, it will be a real scientific and industrial challenge.

On another, more personal, note, I would like to conclude by saying that over the 12 past years I have been in daily contact with core analysts, reservoir engineers, academic researchers, I have often felt frustrated making decisions based on incomplete and imperfect information. But I never got tired of understanding the complexity of flow in a porous medium.

I would like to reiterate my huge gratitude to the Society of Core Analysts, to its members, for the honour they have given me, and for having given me the opportunity to share with you a few thoughts on the place of core sample analysis in the development of reservoirs. Thank you all once again."

"END-POINT…AND…STARTING POINT"

End-point is provided by your Editor for 'miscellany'. Please feel free to send in your contributions…

This is my first issue of *SCA News* as your SCA editor. I want to extent my appreciation to SCA for the confidence you have placed in me as 2008 VP Publications. I also want to thank Andrew Cable for his outstanding efforts in this position over these last three years.

Your continued involvement in the SCA News is vital…it is the SCA News. Therefore please consider making a contribution to your publication. Submittals for the April 2008 issue should be received by March 2008.

I trust that all have had a great 2007 and hope that all will have a prosperous and exciting 2008.

Patrick Lasswell
VP Publications

For advertising, rates, please contact SCA VP Publications

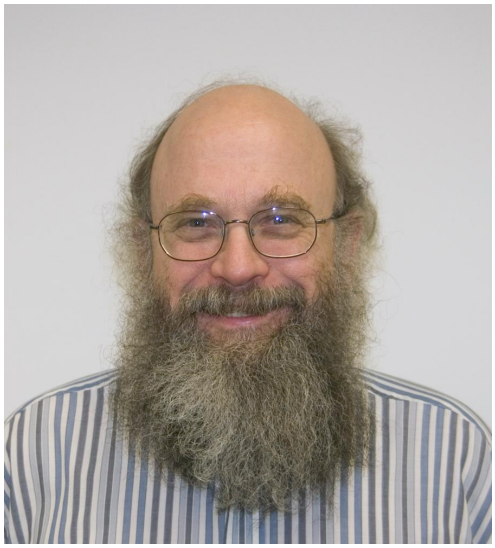

Photo: Patrick Lasswell