



AICISE DECEMBER 2006 NEWSLETTER

AICISE ADDS THREE PRINCIPAL INVESTIGATORS:

Drs. Pedro Pereira Almas and Stephen Larter are pleased to announce that AICISE has added three additional Principal Investigators to the five current PI ranks. They are:

Dr. Ian Gates is an Associate Professor in the Department of Chemical and Petroleum Engineering in the Schulich School of Engineering at the University of Calgary. He worked for seven years in industry prior to joining the university. His primary research interests are in thermal and thermal-solvent methods and optimization of these technologies for *in-situ* heavy oil and bitumen recovery as well as application of smartwell technologies for adaptive production of heavy oil fields. He is also researching well placement and operating strategies for catalytic-air-steam recovery processes. He holds a B.Sc. from the University of Calgary, a M.A.Sc. from the University of British Columbia, and a Ph.D. from the University of Minnesota, all in chemical engineering.



Dr. Apostolos Kantzas is a Professor in the Department of Chemical & Petroleum Engineering in the Schulich School of Engineering (University of Calgary). He is holder of a Canada Research Chair in Energy and Imaging and the Director of the Tomographic Imaging and Porous media Laboratory. He leads a 45-person research group that is involved in research related to problems of flow through porous media, oil and gas recovery, soil remediation, reactor design and tomographic imaging. He has authored/co-authored over 240 papers and over 175 technical reports.



Dr. Ron Spencer is a Professor of Sedimentary Geochemistry in the Department of Geology & Geophysics at the University of Calgary and is the foremost expert on the influence of hydrothermal processes in sedimentary systems. Dr. Spencer has over 70 papers in leading international journals and served as associate editor for *Geochimica et Cosmochimica Acta*. He pioneered research on regional hydrothermal systems responsible for development of dolomite reservoirs in western Canada and into long-term changes in the chemistry of seawater resulting from variations of the input of hydrothermal fluids. His current research focuses on long-term changes in fluid flow regimes within the crust (meteoric versus hydrothermal), driven by mantle convection, and the influence on



seawater chemistry, global climate and diagenesis, including aspects of hydrocarbon migration and degradation.

NEWSFLASH:

Congratulations to the ISEEE, AICISE, Schulich School of Engineering and Faculty of Science Team who submitted a funding application to the Canada Foundation for Innovation (CFI) for infrastructure funding.

CFI announced that \$9M has been awarded for the acquisition of equipment for the in-situ upgrading program at the University of Calgary. The next quest is to obtain matching funding from the Alberta government.

RECOGNITION & CONGRATULATIONS:

Congratulations to the Schulich School of Engineering's In-Situ Combustion Research Team for receiving the Syncrude/ASTech Innovation in Oil Sands Research Prize.



Matt Ursenbach and Mark Hancock receiving the ASTech award on behalf of the team from Jim Carter, President and C.O.O. of Syncrude Canada, the award's sponsor. The team's researchers have been exploring sustainable methods for the recovery of heavy oil and bitumen with a focus on *in-situ* combustion-enhanced oil recovery. A description of the award application follows:

With Alberta's oil sands projected to produce two million barrels per day by

2010, researchers continue to explore sustainable methods for the recovery of heavy oil and bitumen. Recently, the In-situ Combustion Research Team with the Schulich School of Engineering at the University of Calgary made technical advances pointing to in-situ combustion (ISC) as a process worthy of consideration.

The ISC process uses a wall of fire, driven by the injection of air or oxygen, to force the oil through the reservoir toward a well where it can be more easily extracted. The benefits of this method are that it does not require the vast amounts of water required for current methods, and compared to steam injection it has significantly higher energy efficiency and substantial environmental benefits. While the process was patented in 1923 and has been successful in the laboratory, success in the field has been somewhat elusive to date. The team's focus has been on ways to improve the in-situ combustion enhanced oil recovery method, and minimize its risks.

The team has been conducting its research for more than 30 years,

and from its formation in 1974 until the late 1990s, the group carried out leading-edge research. In 1998 when BP merged with Amoco, the University of Calgary was selected as the location for a state-of-the-art BP Air Injection Research Laboratory.

Today, the In-Situ Combustion Research Team consists of about 30 people including eight research associates and 20 graduate students led by the University of Calgary's Dr. Gordon Moore and Dr. S.A. (Raj) Mehta, both internationally recognized leaders in the area of in situ combustion technology. Together they have helped to establish over 20 international research and educational partnerships around the globe from China to Peru, bringing benefits to both the University and the Canadian oil industry. (Source: www.astesch.ab.ca)

Congratulations to Nashaat Nassar who has received the Ursula & Herbert Zandmer Graduate Award, the J.B. Hyne Graduate Award and Schulich School of Engineering Travel Award. These awards totaled \$8,200. Way to go, Nash!

OUT AND ABOUT AND PRESENTATIONS:

Several AICISE-related people have been traveling abroad recently. Drs. Pereira, Larter and Moore presented at the First Shell International Science Symposium in Den Haag, Holland November 1-3, 2006. Drs. Gates, Mehta and Moore and Mr. Chris Leskiw and a number of AICISE-related students recently attended the World Conference on Heavy Oil in China. In addition, Dr. Pereira presented and was discussion leader of the session "in Situ Upgrading" in the 4th Heavy Oil Production SPE Forum 2006 in Lisbonne, Portugal, October 22-26, 2006.

AICISE WINTER TERM PERCOLATOR SESSIONS:

Future Percolator* sessions scheduled are:

- January – Steve Larter
- February – Pedro Pereira

* Sorry, because of confidentiality and intellectual property issues Percolator sessions are open only to AICISE-related students and staff and members of the staff of our industrial partners.

FUTURE EVENTS TO ADD TO YOUR CALENDAR:

AICISE Centre Manager David Reynolds, a former National Park Warden and Wildlife Management Instructor at B.C.I.T. has agreed to give a special presentation in the New Year on wildlife (bear) awareness to AICISE and any other interested students. The date and location will be announced in January. If you spend any time in the backcountry, this may be of interest to you.

WEBSITE:

If you haven't already visited the new AICISE web site, please do so (www.aicise.ca). The web site will be regularly updated with information you may want to be kept informed about.

AICISE CHRISTMAS LUNCH:

The AICISE Co-Directors and the Centre Manager invite AICISE-supported students, staff, PIs and Research Associates to join them for a festive season buffet lunch at the University Club in MacEwan Centre on Friday, December 15 at noon. It will be an opportunity to celebrate the end of the fall term and the start of the holiday season. It will also be an opportunity for everyone related to AICISE to meet members of the AICISE Technical Advisory Committee. If you plan to join us, please RSVP to Susan Dooley at 210-9610 or sdooley@ucalgary.ca by December 07.

AICISE TECHNICAL ADVISORY COMMITTEE MEETING:

AICISE's Technical Advisory Committee (TAC) will be meeting December 14 and 15 in the CCIT and ES buildings. TAC members include: Dr. Sanjay Srinivasan, University of Texas; Dr. Patrick Corbett, Heriot Watt Institute of Petroleum Engineering; Dr. Frank McCaffery, Chevron (retired); Dr. Otto Strausz, Professor Emeritus, Chemistry at U of A; and Dr. Lorraine Whale (Chair) from Shell Canada Limited. AICISE'S two new (soon to be announced) industrial partners may be attending the meeting.

AICISE MANAGEMENT ADVISORY BOARD MEETING:

AICISE's Management Advisory Board (MAB) is scheduled to meet on Thursday, January 11, 2007 from 9 to noon. The MAB provide executive leadership and direction for the AICISE program.

RECENT AICISE- RELATED PAPERS:

- Lopez-Linares, F., Carbognani, L., Gonzalez, M.F., Sosa-Stull, C., Figueras, M., and Pereira-Almao, P. 2006. Quinolin-65 and Violanthrone-79 as Model Molecules for the Kinetics of the Adsorption of C7 Athabasca Asphaltene on Macroporous Solid Surfaces. *Energy & Fuels*, 20, pp 2748-2750.
- Zhang, D.A., and Lines, L.R., 2006, The robustness of Vp/Vs mapping, *The Leading Edge*, 25, 758-763.
- Zou, Y., Bentley, L.R., Lines, L.R., and Coombe, D., 2006, Integration of seismic methods with reservoir simulation, Pikes Peak heavy-oil field, Saskatchewan, 25, *The Leading Edge*, 764-781.
- Lines, L., Embleton, J., Fay, M., Palmiere, B., Reine, C., and Schmitt, D., 2006, Reservoir characterization of Plover Lake Heavy-oil Field, CSEG National Convention.
- Dumitrescu, C., and Lines, L., 2006, Vp/Vs ratio of a heavy oil reservoir from Canada, CSEG National Convention.
- Dumitrescu, C., and Lines, L., 2006, Heavy-oil reservoir characterization using Vp/Vs ratios and spectral decomposition, SEG Annual Meeting, New Orleans, La.

For further information about the AICISE Centre's mandate, role and research activities, please go to the web site (www.aicise.ca) or contact:

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