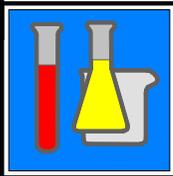




THE SOCIETY FOR ORGANIC PETROLOGY



NEWSLETTER

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32nd TSOP Annual Meeting Yogyakarta, Indonesia



View from the Buddhist Temple at Borobudur. Built 750 AD. Photo courtesy of Tim A. Moore.

20th to 26th September, 2015

TSOP 32ND Annual Meeting
20th – 26th September 2015

On the Edge: Hydrocarbons in the Tropics

The Organising Committee is pleased to announce that plans are well advanced for your arrival at the TSOP 32nd Annual Meeting in Yogyakarta, Indonesia. The Workshop and Technical Programs will span from the 20th to the 23rd of September. A post conference field trip is planned for the Mahakam Delta area of east Borneo from the 24th to the 26th of September 2015.

This meeting will provide an opportunity to discuss different aspects of organic petrology in a special atmosphere in the heart of the cultural center of Java. Indonesia is the largest exporter of thermal coal in the world and has a huge and historic petroleum industry, dating back to the early 1900s. Come and join your Indonesian colleagues and exchange ideas, methods, hypotheses and results on all aspects of geology, geochemistry and petrology.

Our hosts for this year's meeting will be Gadjah Mada University, located in Yogyakarta. They are one of the premier universities in Indonesia, officially founded in 1949 and are renowned for their geoscience program in SE Asia.

Details of the meeting can be found on the meeting website <http://tsop2015.ugm.ac.id>. Abstracts and registration submission will begin mid-January 2015. Feel free to advertise this event widely and please do not hesitate to contact the Organizing Committee if you have any questions.

Don't miss this once in a lifetime event - see you in Yogyakarta!

Best Regards

TSOP 2015 Organizing Committee

Volcano near Yogyakarta
(© Tim A. Moore, 2007)



The Society for Organic Petrology

TSOP is a society for scientists and engineers involved with coal petrology, kerogen petrology, organic geochemistry and related disciplines. The Society organizes an annual technical meeting and field trips; sponsors research projects; provides funding for graduate students; and publishes a web site, a quarterly Newsletter, membership directory, annual meeting program and abstracts, and special publications. Members may elect not to receive the printed Newsletter by marking their dues forms or by contacting the Editor.

Members are eligible for discounted subscriptions to the Elsevier journals *International Journal of Coal Geology* and *Review of Palaeobotany and Palynology*. Subscribe by checking the box on your dues form, or using the form at www.tsop.org. Contact Paul Hackley phackley@usgs.gov if you do not receive a bill or have any other problems with a subscription. For the best prices on subscriptions to AGI's *Geotimes*, see their web site at www.geotimes.org/current.

TSOP is a Member Society of AGI and an AAPG Associated Society.

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GUIDELINES:

The TSOP Newsletter welcomes contributions from members and non-members alike. Readers are invited to submit items pertinent to TSOP members' fields of study. These might include meeting reports and reviews, book reviews, short technical contributions including those on geologic localities or laboratory methods, as well as creative works such as poems, cartoons and works of fiction. Photos, graphs and other illustrations are welcomed. Low-resolution images are discouraged, as they cannot be reproduced well in print. Articles are preferred in Microsoft Word, RTF or plain text formats.

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Address Changes

Please report any changes in address or contact information to: Paul Hackley, TSOP Membership Chair,
phackley@usgs.gov

Members can update their own information by logging into the secure TSOP website:
www.tsop.org/mbrsonly/

The TSOP Newsletter is published quarterly by The Society for Organic Petrology and is distributed to all Society members as a benefit of membership.

Membership in the Society is open to all individuals involved in the fields of organic petrology and organic geochemistry. For more information on membership and Society activities, please see:

www.tsop.org

For purposes of registration of the TSOP Newsletter, a permanent address is:

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CONTENTS

Letter from the President.....	4
TSOP Dues Reminder.....	5
Institutional/Corporate Memberships.....	5
TSOP Newsletter Vote	5
Castañó Award Nominees Call for 2015.....	6
New TSOP Members	7
Special Issue of IJCG Paper Call	8
Geology of Indonesia	9
31 st Annual Meeting Report.....	14
EUOGS Meeting Report.....	15
Petrographic Classification of Fly Ash.....	16
Spackman Award Summaries	18
Castañó Award 2012 – Colin Ward	22
Castañó Award 2014 – Maria Mastalerz	23
Calendar of Events.....	25
31 st Annual Meeting Photos	26

member society of



Newsletter Submission Deadlines

March Issue: March 5th, 2015
June Issue: June 5th, 2015
September Issue: September 5th, 2015
December Issue: December 5th, 2015

Letter from the President

Welcome to the final issue of the TSOP newsletter for 2014, the last newsletter to be available in printed format. Like many organizations, printing hard copies of the newsletter and distributing them by snail mail to an international body of recipients has not only become an onerous and unnecessary task, it has become expensive. At the recommendation of Council, TSOP members voted to discontinue the practice of distributing newsletters by mail, except at the request of honorary members who may express a wish to continue. Commencing 2015, we can look forward to quarterly emails from TSOP Editor, Rachel Walker, announcing that the newsletter is available for review and download from the TSOP website, www.TSOP.org, and TSOP administrators can redirect the time, energy and associated costs to other deserving activities.

The highlight of 2013-2014 for many members for the 31st Meeting of TSOP held in Sydney, Australia, September 27 - October 3, 2014. The local organizing committee entitled the meeting **Organic Matter Down Under II**, and billed it as "a meeting not to be missed", and indeed it was so. We had 98 participants and a record attendance and contributions from student members. Once again, thanks and congratulations to the local organizing committee of Neil Sherwood, David French, Sarah Jardine, Joan Esterle, Zhongsheng Li and Janet Harris led by Conference chairs, Colin Ward and Kaydy Pinetown, who organized an excellent technical program and superb pre- and post-meeting field trips. In addition, two exceptional short courses were presented by Dr. Walter Pickel and Prof. Claus Diessel (honorary); and by Dr Alexandra Golab (FEI Lithicon Digital Rock Services). A lively program of student activities was led by Anastasia Dmyterko, University of Queensland. We must also applaud the organizing committee for their special efforts to encourage participation by graduate student researchers by providing financial assistance from sponsors to offset student travel expenses, a cause to which TSOP Council is also duly committed.

In 2015, members are invited to Yogajakata by Tim Moore and his organizing committee. Thanks to the effort and enthusiasm of these dedicated members, we continue to enjoy our annual gatherings and make significant contributions to Organic Petrology and Geochemistry and keep our Society healthy and vibrant.. And growing! As you will see in the newsletter, we have added eight new members to our ranks since September and so TSOP has enjoyed steady growth for the third

year in a row which is, in part, due to international meeting venues.

The high calibre of research and professional activity on display at the Sydney meeting was reflected in the TSOP Awards presented this past year. The most prestigious award TSOP bestows in recognition of exceptional professional achievements is The *John Castano Honorary Member Award*. The 2013-2104 recipient, Dr. Maria Mastalertz, University of Indiana/Indiana Geological Survey is certainly worthy of this honor. The award was announced at the annual business luncheon in Sydney and Maria's life and achievements were showcased in a colourful presentation by Shifeng Dai and Agneiska Drobniak. The Ralph Gray Award for the refereed best paper in coal geology and organic petrology published in 2013-2104 was awarded to Nina A. Van de Wetering, Jaoa G.B. Mendonça Filho and Joan A. Esterle for their paper entitled "*Palynofacies changes and their reflection on preservation of peat accumulation stages in the Late Permian coal measures of the Bowen Basin, Australia: A new system for coal palynofacies characterization*" which was published in International Journal of Coal Geology, 2013, V.120, pp. 57-70.

The Dal Swaine Award for best paper in inorganic and organic geochemistry was presented to Elizabeth J. P. Jones; Steve H. Harris, Elliott P Barnhart et al. for their paper entitled "The effect of coal bed dewatering and partial oxidation on biogenic methane potential" published in International Journal Coal Geology, 2013, V. 115, pp. 54-62.

The Distinguished Service Award was presented to Vice President Shifeng Dai and four Spackman Research Grants were awarded this year in recognition of postgraduate student research. Congratulations to the following recipients: Carl Peters, Sophia Bratenkov., Arka Rudra and Julian Zapata. Please see the newsletter for details of the awards and the recipients.

On your behalf, I expressed our collective thanks to members of Council and TSOP administration who retired at the annual meeting for their tireless efforts on behalf of TSOP over the years. Special thanks are due to our retiring treasurer, Mike Avery, who devoted 12 years of time and expertise to TSOP as treasurer, council member, developer and manager of the secure website. With unanimous support from the membership, we expressed our gratitude by honoring Mike with a lifetime membership. Sincere thanks are also due to former

President, Colin Ward, who stepped down after 8 years as Chair of the Research Committee. Colin's commitment to the Spackman Awards and the DOM Atlas has greatly contributed to TSOP's support for progressive research. Thomas Gentzis will be taking Colin's place as Chair of the Research Committee.

Thanks are also due to the new members of council: Margo Corum, USGS Reston, USA is our new Treasurer and Kaydy Pinetown, CSIRO, Sydney, Australia is our new Councillor. Please support these individuals in their work as well as your continuing council members, Shifeng Dai, Jingle Ruppert, Rachel Walker and Jesse Carrie. A number of committees and administrative officers also contribute to TSOP administration and support the work of council, please visit the website to recognize these individuals. Under their stewardship and wise counsel, 2015 promises to be another rewarding year for TSOP.

With seasonal greetings and best wishes for a Healthy, Happy and rewarding year ahead,

Judith Potter
President

TSOP DUES REMINDER!

It's that time of year again! TSOP dues payments are due on or before **January 1st** so we encourage you to make your payment now so that you can continue your TSOP membership and support the society and its work. Our Dues Prepayment Incentive can save you time and the hassle of arranging your yearly payment. When you prepay your dues four years in advance at the regular rate of \$25/yr we will give you the fifth year free!

We encourage members to use our convenient online dues payment system. You can use it to pay by credit card, check (US Members), money order or credit card. You can login at www.tsop.org/mbrsonly and select 'Online dues payment' OR go to www.tsop.org/dues and access the online form without logging in. Please note that all credit card payment processing is via PayPal and in most cases you don't need a PayPal account to use it. This saves the society about 70% or more on transaction fees.

If you want to use a dues form, a copy of this year's form can be downloaded from the website by following the

'Members only->Dues' links from the main page (www.tsop.org).

Thank you for your interest and support of TSOP and we look forward to a renewal of your TSOP membership.



Institutional/Corporate Memberships



We'd like to make members aware that membership in TSOP is also open to any organization having an active scientific interest in organic petrology or related fields. TSOP especially encourages institutions to join at the special **institutional rate of \$75/yr** and help support the goals of the Society. See the website for details: www.tsop.org/join.htm

TSOP Newsletter Vote Final Printed Issue

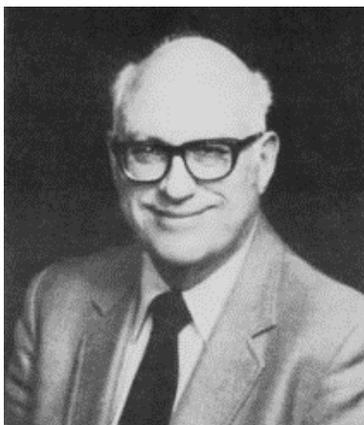
At the 2014 Sydney Annual Meeting, TSOP Council decided to have the membership vote on whether the Society should continue to offer the printed version of the newsletter, or if it should move to an entirely electronic newsletter available through the website. TSOP started the electronic version of the newsletter in 2003. Since then, we have encouraged members to move from receiving the printed edition of the newsletter to the electronic edition on the website. The electronic edition costs the Society very little to produce, whereas the printed edition has continued to climb in cost over the years, mostly due to rising postage expenses. The vote on this issue was conducted in late October/early November and the results are as follows:

45 members voted to stop printing the newsletter
4 members voted to keep printing the newsletter

With the decision to stop printing the newsletter approved by the membership, the final printed edition of the newsletter will be this December 2014 issue. All future issues will be electronic only and available on the website. Those members who paid the extra dues for the printed newsletter will receive credit for any portion of those extra dues that remain. Honorary Members will also be provided a printed version of the newsletter if requested, as will members who do not have internet access.

Thank you to all the members who voted on this issue. If you have any questions about this decision, please contact the Editor at drrachelwalker@gmail.com

John Castaño Honorary Membership Award Call for Nominations



Deadline: May 31, 2015

TSOP members are invited to nominate the scientist of your choice for the 2015 John Castaño Honorary Membership Award, The Society for Organic Petrology's highest honor (www.tsop.org/honmem.htm). The award acknowledges distinction in a scientific discipline of significance to the Society, recognition of contributions in research, service to TSOP and/or education. The John Castaño Honorary Membership conveys life membership in the Society. It is named in honor of John Castaño, one of our most active Houston-based founding members. John served as inaugural Vice-President, and later as President of TSOP. He was an organizer of three TSOP meetings in the Houston area, and was made an Honorary Member in 1995. John

served TSOP in many capacities until his death in 1997; a memorial article was published in the June 1997 issue of the TSOP Newsletter.

If you would like to suggest a candidate for the 2015 Castaño Honorary Membership Award, **please submit a letter of recommendation and a brief vita of the nominee to:**

Dr. Shifeng Dai
China University of Mining and Technology,
D11, Xueyuan Road, Haidian District,
Beijing 100083,
P.R. CHINA
E-mail: daishifeng@gmail.com

by May 31, 2015.

It is suggested that supporting letters of recommendation from colleagues and other scientists accompany the package. Emphasis should be placed on the significance of the nominee's work.

Nominations will be reviewed by the Castaño Award Committee and results will be announced at the Annual Meeting. The selection process is confidential and nominees do not have to be former or current TSOP members. The committee evaluates research, service and educational impacts based on the following criteria:

- Research contributions include work that demonstrates a high degree of originality and serves to advance the science of organic petrology or related disciplines. Nominees must possess a sustained international record of professional publication and achievement,
- Nominees recommended for service must demonstrate significant contributions to TSOP in a leadership role. Their service must have enabled the Society to stimulate interest and promote innovative research in coal geology. Contributions include educational activities, administrative duties, or the development of the Society,
- Nominees recommended for education must demonstrate a high degree of dedication and significant impact as a teacher of organic petrology or related disciplines.

Dr. Shifeng Dai
TSOP Vice-President and
Chair of the Honorary Member Selection Committee

New TSOP Members



Carl Peters

Mr. Peters received his B.Sc. in geosciences in 2010 and M.Sc. in marine geosciences in 2012 from the University of Bremen. He is a doctoral candidate at Macquarie University where his research focuses on biomarkers and fluid inclusions of early Earth using samples from Australia.



Meifen Li

Dr. Li received her PhD in 2010 from Taiyuan University of Technology in chemical engineering and technology. She is currently working on coal, oil and gas at Taiyuan University of Technology and has attended TSOP's annual meetings in 2006, 2012, and 2014.



Arka Rudra

Mr. Rudra received his BSc in geology in 2010 from the Univ. Calcutta and MSc in applied geology from IIT Bombay. He currently is studying organic geochemistry and palynology in his PhD studies at IIT Bombay.



Shaoqing Wang

Dr. Wang received his PhD in 2010 from the China University of Mining and Technology for studies of mineral resource prospecting and exploration. His research interests include organic petrology studies such as the origin of barkinite and coal chemistry studies such as applied in coal utilization.



Humberto Carvajal-Ortiz

Dr. Carvajal-Ortiz is currently at Core Laboratories in Houston where his work includes the study of the organic petrology and geochemistry of diverse source rocks and petroleum systems from around the world. Humberto received his PhD in 2012 from Indiana University in geology and geochemistry. He also has a MSc. Geology and Geochemistry from Iowa State University (2007) and a BSc. in Geology from Universidad Industrial de Santander, Colombia (2004). He has worked in a diverse variety of projects going from thermal maturity assessments of source rocks using organic petrography and programmed pyrolysis, chemostratigraphic correlation of marine and terrestrial sequences using stable isotopes and biomarkers, all the way to the geochemical evaluation of gas-hydrate systems.



Syeda Areeba Ayaz

Ms Ayaz earned her BSc honors and MSc degrees in Geology in 2008 and 2009 and is a gold medalist from University of Karachi. She worked as a petroleum geologist with Weatherford Oil Tools Pakistan during 2011 - 2012, mainly working on coal bed methane and shale gas projects. She is currently pursuing a PhD from the University of Queensland focusing on stratigraphy and coal petrography of the coal measures in Bowen Basin, Australia.

Special Issue for the International Journal of Coal Geology

The guest editors for the Special Issue of the International Journal of Coal Geology would like to invite all authors of papers presented at the **TSOP 2014 Annual Meeting** to submit their full papers for inclusion in the special issue.

The submission website for the journal is located at:
<http://ees.elsevier.com/cogel/default.asp>.

The Call for Papers can be found at the following site:
<http://www.journals.elsevier.com/international-journal-of-coal-geology/call-for-papers/call-for-papers-on-selected-papers-presented-at-the-31st-ann/>.

Key points for potential authors to remember:

- (1) Article Type Name: It is essential for authors to choose the right Article Type name. Please select **SI: 31st TSOP Meeting papers** when prompted to select the Article Type upon submission.
- (2) The due date for submission of your complete paper for the special issue is **31st December 2014**.
- (3) The acceptance deadline is **30th June 2015**, the date by which all manuscripts are to be fully reviewed and final decisions made on all manuscripts.

The Geology of Indonesia A Preview for the 32nd Annual TSOP Meeting in Yogyakarta

Professor Hendra Amijaya, Gadjah Mada University, Indonesia

Dr Tim A. Moore, Cipher Consulting Ltd., New Zealand/Australia

Indonesia is an emerging land. Its geology is raw. It is a country of volcanoes, earthquakes and tsunamis. Indeed, Indonesia is the proud owner of the largest number of volcanoes in the world. The reason for this, of course, is that subduction zones surround it, the result of being at the nexus of the Australian-Indian, Philippine, Pacific and Eurasian tectonic plates. It is truly on the edge of things.

Indonesia is no small expanse. Its 17,000 islands have a cumulative land area of over 1.9 million km². If you laid a map of Indonesia over the USA it would span from California to Washington DC. Thus it is hard to get an idea of its geology in one small account. However, the reader is directed to monographs such as Wallace (1898), van Bemmelen (1949), Gupta (2005), Darman and Sidi (2000) and Hamilton (1979) for overviews of the geology, geography and biology of the region.

In general, Indonesia can be divided into three broad areas; the islands in the west that are part of the Sunda continental shelf whilst the Far East islands are on part of the Arafura continental shelf (see Fig. 1). In between is a mélange of oceanic and fragmentary continental pieces manifest as small to moderate sized islands separated by warm equatorial seas.

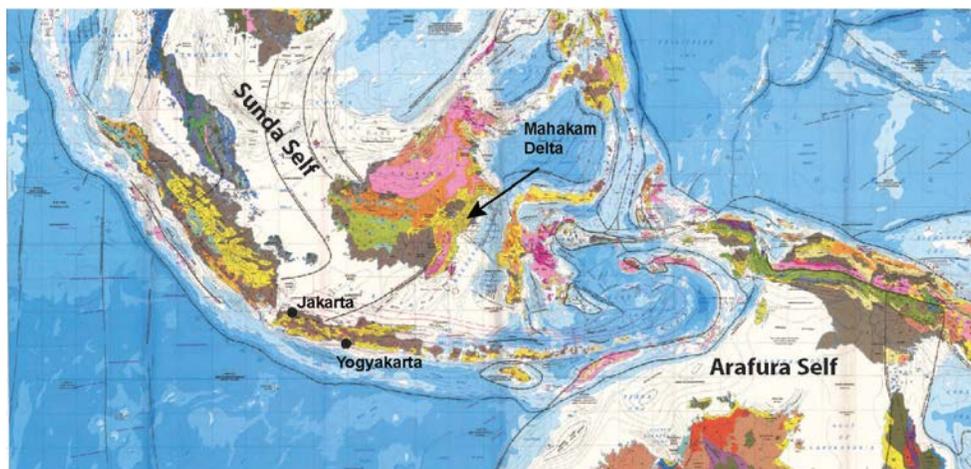


Figure 1: Tectonic map of Indonesia. For explanation of colors see Hamilton (1979).

The Sunda shelf is the most southeastern part of the Eurasian tectonic plate. The main Indonesian islands of Sumatra, Java and Kalimantan are part of the Sunda shelf. The areas between these islands are thought to have been emergent during the last ice age; off shore drilling (between western Kalimantan and eastern Sumatra) have encountered freshwater peats buried under marine ooze that date to this time. The Arafura shelf is part of the Australian tectonic plate and was also emergent during the last ice age and/or previous ones. Rising sea levels stranded and isolated the native aboriginal Australians.

The 'economic' basement in the continental areas are mainly derived from Palaeozoic and Mesozoic age sediments, most of which are slightly to highly metamorphosed. In western Indonesia, the Mesozoic basement sediments can range from Triassic limestone to granitic intrusions. In the eastern part of Indonesia, particularly Papua, Mesozoic age material consists of granite, ultramafic and metamorphic rocks but also contains some carbonates and clastics. And if the shelf sequences aren't complicated enough, the areas between the Sunda and Arafura shelves are a true mixing bowl of

geology. For example, in one part of the island of Sulawesi, Mesozoic-age rocks of turbidite origin overlie low- to high-grade metamorphic material most likely derived from the Eurasian continent (i.e. Sunda shelf). Nearby to this area, continental terrains are exposed that are clearly sourced from the Australian continent (Arafura shelf). Additionally, this terrain is overlain by deep marine carbonates. It is a tribute to the Indonesia geologists, as well as their international colleagues, that they continue to unscramble this geology omelet.

Although no less complex than older rocks, the Tertiary in Indonesia is somewhat more apparent, if for no other reason than the rocks are not as old or as deformed. The largest and most commercially viable Tertiary basins are in the west. These basins are primarily located in Kalimantan and Sumatra, though Java also has small, but mostly commercially insignificant basins. Figure 2 shows the onshore basin distribution for Kalimantan and Sumatra. The reader is directed to other publications for more in-depth analysis (Bachtiar et al., 2013; Calvert and Hall, 2003, 2007; Hall, 1997, 2009; Hall and Morley, 2004; Moore et al., 2014; Windari et al., 2013; Witts et al., 2012).

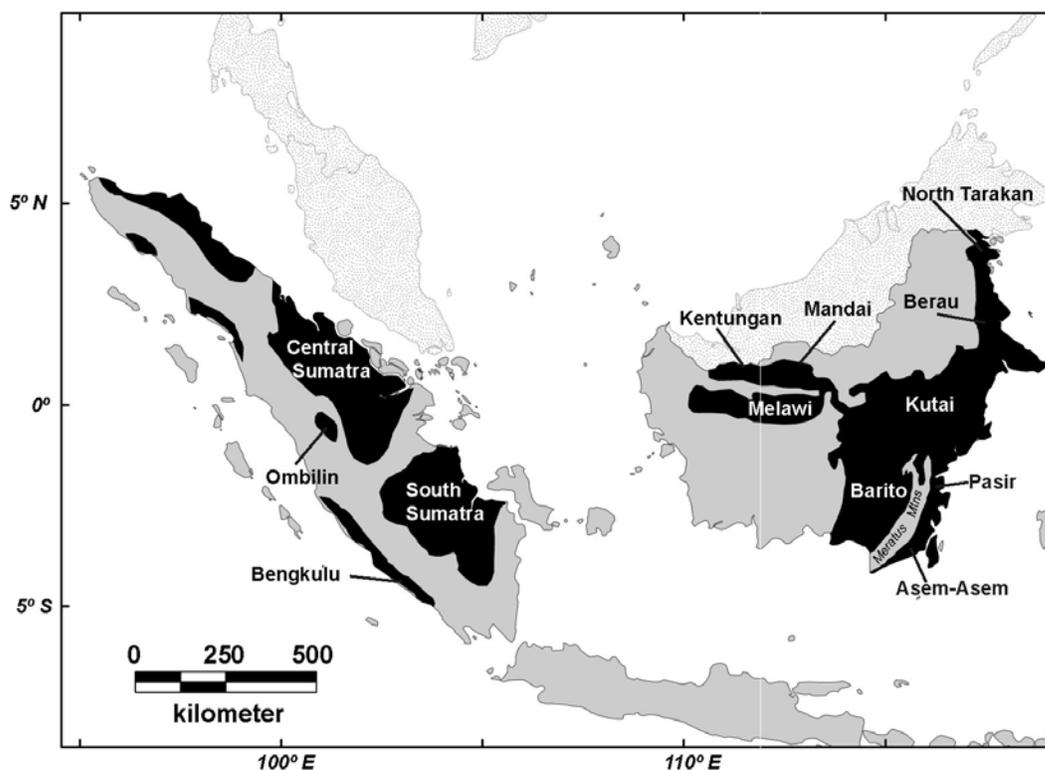


Figure 2: Tertiary coal-forming basins in Kalimantan and Sumatra (modified from Moore et al., 2014).

In western Indonesia, back-arc basins allowed rapid sedimentation to occur during the Tertiary in what may best be described as partially closed marine environments. These sediments were then subjected to moderate to intense folding which occurred at the end of the Tertiary. Most of Indonesia's oil fields are in these back-arc basins and similar basin evolution and sedimentation cycles may be inferred for each basin, although basin development and timing of tectonic events will, of course, vary.

Tertiary sediments were deposited initially on eroded surfaces cut into mostly Mesozoic strata. Faulting, which resulted from extensional tectonics characterized the early Tertiary time and was contemporaneous with erosion, deposition and controlled sedimentation throughout most of the Tertiary. Fault controlled sedimentation is most noticeable in the Central Sumatra, South Sumatra, and Java sea basins.

Hydrocarbons are thought to come almost exclusively from Tertiary-age sediments. Hydrocarbons include liquid, gas and coal phases. Most of these hydrocarbons are sourced from fluvial and near marine sediments of either Eocene or Miocene-age. The Mahakam Delta area has been a historic petroleum-producing region for both onshore and offshore hydrocarbons. These are almost exclusively found in Miocene-age sediments, which can be greater than 10,000 m in thickness in some offshore areas (i.e. just east of the Mahakam Delta; Fig. 3). South and Central Sumatra are also centers of liquid and gas hydrocarbon exploitation.



Figure 3: Eastern edge of the Mahakam River Delta as it juts out into the Makassar Straits. (Photo courtesy of Tim A. Moore)

Solid hydrocarbons, that is coal, is a current stalwart of the Indonesian economy. About 99% of Indonesia’s coal resources come from either South Sumatra or Kalimantan and most are Miocene in age although some Eocene strata in Kalimantan also contain significant coal resources (Anonymous, 2012). Most coal seams are either subbituminous or lignite in rank, although some bituminous coals do occur where basinal heat flow is higher for a number of reasons (Amijaya and Littke, 2006; Moore et al., 2014; Susilawati and Ward, 2006). Coal beds also vary in thickness, a result of a combination of depositional environment and climate (Friederich et al., 2009; Mazumder et al., 2010). Some coal seams exceed greater than 40 m in thickness (Fig. 4) and are extremely low ash yield (<1%) and low sulphur (<0.05%), giving the opportunity to one miner in particular to market his coal as ‘Envirocoal’ (Moore, 1993).



Figure 4: Miocene coal seam being mined in Kalimantan Selatan. Main seam is about 30 m thick. (Photo courtesy of Tim A. Moore)

Finally, modern peat mires that blanket large parts of Sumatra and Kalimantan, should at least be mentioned. It has been established that the same vegetation which currently make up the flora of modern Indonesian mires has been the same since the Miocene (Anderson and Müller, 1975; Demchuk and Moore, 1993). This is not surprising considering the paleogeographic setting of Indonesia has not changed much since the beginning of the Tertiary (Hall, 1998). There are numerous other articles on Indonesian peats which the reader may wish to delve into at their leisure (Anderson, 1964, 1983; Bruenig, 1970, 1990; Cameron et al., 1990; Cobb and Cecil, 1993; Dehmer, 1993, 1995; Diemont and Supardi, 1987a, b; Esterle et al., 1987; Moore and Hilbert, 1992; Moore et al., 1996; Morley, 1981; Morley and Flenley, 1973; Neuzil and Cecil, 1992; Neuzil et al., 1993; Page et al., 2006; Rieley and Page, 1997; Ruppert et al., 1993; Sieffermann et al., 1992; Supiandi, 1989; van de Meene, 1984; Weiss et al., 1998).

In summary, the geology of Indonesia has been and currently is dynamic and changing at a rate faster than most other places in the world. It is both a laboratory for studies of current processes as well as a window into the past. As said at the beginning of this article, Indonesia sits at the nexus of many plate boundaries and is perhaps the key to many a geological mystery. Come and see for yourself and help unravel some of those mysteries at the 32nd Annual TSOP Conference in Yogyakarta!

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allowing accompanying family members to visit some of Sydney's attractions while the meeting was in progress.

The technical program started with a one-day short course on the applications of organic petrology, presented by Professor Claus Diessel and Dr Walter Pickel, which provided an opportunity for students and more experienced scientists to refresh or upgrade their petrological skills. This was followed by a one-day field trip to the southern Sydney Basin, visiting the Camden coal seam gas field, outcrops of coal-bearing strata on the coast north of Wollongong, the geological section associated with the spectacular Sea Cliff Bridge, and finishing with a general overview of southern Sydney Basin geology from Hargraves Lookout near Stanwell Park.

A second one-day short course was presented by Dr Alexandra Golab of FEI-Lithicon on the third day of the meeting, covering recent advances in digital rock analysis using X-ray micro-computed tomography (μ CT), electron microscopy (including QemSCAN), and a series of related techniques. Reflecting the nature of the meeting, special focus was on the use of this technology in the evaluation of unconventional hydrocarbon resources, such as coal seam gas, shale gas and tight oil deposits.

Meeting Report

31st Annual Meeting of the Society for Organic Petrology Sydney, NSW 26th September – 3rd October, 2014

A total of almost 100 delegates from 11 countries on six continents came together for the 31st Annual Meeting of the Society, which was held at Rydges World Square Hotel in Sydney, Australia between 26 September and 3 October, 2014. Sub-titled *Organic Matter Down Under II*, the gathering represented the second time the society had met in Australia, following an equally successful 21st Annual Meeting held at Coogee Beach in 2004.

The week-long program included two separate short courses, two geological field trips, and two days of technical sessions, together with an Icebreaker Reception, a Conference Dinner on Sydney Harbour, and a series of award presentations, both at the Annual Business Lunch and at the conclusion of the technical sessions. A Partners' Program was also included,

The main technical sessions saw presentation of 47 oral and 25 poster papers dealing with a wide range of natural organic materials. The program included sessions on coal formation and characterisation, geobiology and coal-forming environments, coal seam gas generation, storage and flow, gas shale and oil shale petrology, petrology and geochemistry of hydrocarbons and hydrocarbon source rocks, and analysis and applications of biomarker materials. Presentations were given by postgraduate students as well as more established researchers, providing an excellent cross-section of current activity in the diverse areas covered by organic petrology and also of their applications in academic, resource and environmental studies.

Awards presented at the meeting included Spackman Student Research Grant Awards to Carl Peters and Sophia Bratenkov, both of Macquarie University, and to Julian Zapata of the University of Medellin in Colombia. The Ralph J. Gray Award for the best published paper on organic petrology in 2013 was awarded to Nicloa van de Wetering, João Mendonça Filho and Joan Esterle for their work entitled: "Palynofacies changes and their reflection on preservation of peat accumulation stages in

the Late Permian coal measures of the Bowen Basin, Australia” (*International Journal of Coal Geology*, 120, 57-70). The John Castaño Honorary Life Member Award, the highest award given by the Society, was presented to Maria Mastalerz of the Indiana Geological Survey, recognising her wide-ranging contributions over many years on numerous different aspects of organic petrology research. Maria was unable to attend the meeting in person, but her long-time colleague, Agnieszka Drobniak, responded to the award on Maria’s behalf.

The award for the best student oral paper given at the meeting was presented to Danielle Kondla of the University of Calgary for a paper entitled: “Dispersed organic matter and depositional environment: Insights from a Middle Triassic source rock in Arctic Canada”, and the award for the best student poster paper was presented to Koji Takahashi of Hokkaido University for a paper entitled: “Closed and semi-open system pyrolysis for estimating the timing of hydrocarbon gas expulsion from Paleogene coal”. These were presented to the students by Mohinuideen Faiz, representing meeting sponsor Origin Energy, who provided funding for the awards. The traditional TSOP award for the person who travelled the greatest distance to attend the meeting was presented to Dr Rudi Schwab for his 17,000 km journey to Sydney from Chester in the United Kingdom.

Following the technical sessions, a two-day field trip to the Hunter Valley made up the final part of the meeting program. The itinerary included examination of a thick coal seam outcrop at Catherine Hill Bay, visits to open-cut mines working two different coal-bearing successions, and a farewell lunch at one of the wineries in the region.

Sponsorship for the meeting was provided by a number of organisations, including CSIRO, the University of New South Wales, the University of Queensland, the University of Newcastle, the Bowen Basin Geologists Group and the Geological Society of Australia. Companies providing sponsorship included Energy Resources Consulting, Coal and Organic Petrology Services, Origin Energy and Core Laboratories Inc., as well as optical equipment suppliers A.S. & Co. and Hilgers Technisches Büro. Thanks are also expressed to AGL Energy, Bulga Coal Management and Muswellbrook Coal Company for site access and other assistance during the field trips. Lastly, but most importantly, thanks are expressed to the hard-working

members of the Organising Committee, and to all those attending the meeting, for making the gathering such a success.

Authors of papers presented at the meeting are invited to submit full manuscripts on their work for publication in a Special Issue of the *International Journal of Coal Geology*. Manuscripts should be submitted through the Journal’s on-line Editorial System by 31 December, 2014.

Kaydy Pinetown, CSIRO Energy Flagship
Colin Ward, University of New South Wales

Meeting Report

**Eastern Unconventional
Oil and Gas Symposium**
November 5-7, 2014
Lexington, Kentucky
www.euogs.org



This November the Kentucky Geological Survey and the Center for Applied Energy Research at the University of Kentucky joined forces to inaugurate the first unconventional oil and gas meeting in the region. The symposium, hoped to be the first in a series to be held every second year, addressed a broad range of upstream and downstream issues related to energy production from emerging unconventional resources.

This first EUOGS Symposium kicked off at noon on Wednesday November 5th with a keynote presentation by Dr Len Peters, Secretary of the Kentucky Energy and Environment Cabinet.

Dr Peters talked about planning and uncertainty in light of changes in economy, energy consumption, and the rise in unconventional production in recent years. Talks continued through Thursday until noon on Friday 7th, covering topics including Appalachian Basing plays; carbon storage in unconventional reservoirs; oil sands geology and technology; shale gas reservoir



characterization; waste water disposal and treatment; gas flaring in unconventional production; environmental considerations associated with unconventional exploration and production; and regulatory, policy, and market issues. In all, 37 presentations were given at the Symposium with almost 200 attendees registered. Further details of the meeting, including audio of selected talks and PowerPoint presentations for many presentations, can be found at the Symposium website – www.euogs.org.

EUOGS would like to thank the organizations that sponsored this inaugural symposium – Environmentally Friendly Drilling Systems, Kentucky Oil & Gas Association, and EQT. This meeting was a great opportunity to learn about emerging oil and gas resources in the Eastern United States and will prove to be a valuable resource for those involved in the world of unconventional exploration and development.

Petrographic Classification of Fly Ash Components

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The Fly Ash Working Group (FAWG) of Commission III of the International Committee on Coal and Organic Petrology (ICCP) has been engaged for several years in establishing an international classification of the fly ash organic and inorganic components derived from coal (of all ranks) combustion and co-combustion (including biomass, pet coke, etc...) in different operating conditions (PCC, FBC, etc...), (Suárez-Ruiz and Valentim, 2007; Suárez-Ruiz et al., 2008a,b).

To this end several interlaboratory exercises were carried out involving the identification and classification of more than 500 digital photomicrographs (from a total of 2000 pictures) of various fly ash components taken in optical microscopy (using polarized light, a 1λ retarder plate, and a 50x oil immersion objective) and in two different positions (rotating the microscope stage about 360°). The results obtained from the various exercises were statistically treated to obtain the level of agreement among the analysts and with respect to the fly ash component classification following a series of physico-optical criteria organized on successive levels: 3 of which are addressed to particle field identification; and the other 3 to the whole particle identification as shown in Figure 1.

The various established levels with the corresponding qualifiers are:

- i) Nature of Fly Ash Components (Organic or Inorganic);
- ii) Optical Character of the Fly Ash Carbons (Fused or Unfused);
- iii) Optical Structure / Morphology of the Fly Ash Carbons (Dense / Massive or Porous / Vesiculated);

- iv) Optical Texture of the Fly Ash Carbons (Isotropic or Anisotropic);
- v) Origin / Provenance of the Fly Ash Carbons (Coal, Biomass, Pet coke, Other such as tires, etc...); and
- vi) Type of Particle (type of Fly Ash Component) whose identification should be identified following the ICCP Char Classification (by Lester et al., 2000, 2010).

Taking into account the good agreement achieved among the participants in identifying and classifying the fly ash components a general conclusion can be drawn: that the proposed criteria for classifying the fly ash components were correct, effective and easy to apply. Thus, the aim of the Fly Ash Working Group has been accomplished, a fly ash classification has been established and an Atlas on fly ash occurrences is due to be released. The purpose of this Atlas is to help petrographers to identify and classify the components that are found in fly ash originated during the combustion of various feed fuels.

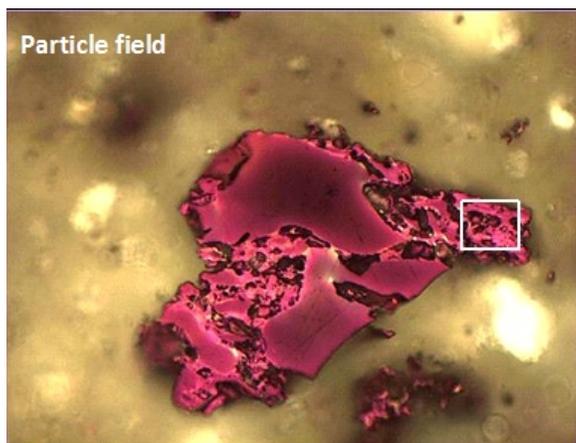


Figure 1. Examples of unburned carbons (particle section and whole particle) in fly ash to be classified following the six established levels (long side of the image: 200 microns).

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**SPACKMAN 2014
AWARD SUMMARIES**

The following are the research project summaries of the 2014 winners of the Spackman Award.

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Petrographic and geochemical evaluation of core samples from horizontal drilling of Amagá Formation Coals: To identify the lateral variation of organic matter and content of the hydrocarbons present.

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It is widely recognized that the organic matter of coals is generating hydrocarbons in liquid and gas state in commercial quantities, but there is no clarity about the mechanisms and factors that control the expulsion (Powell and Boreham 1994; Wilkins and Georges 2002).

On the other hand, doing a review on coals that generate oil (oil-prone) in space and time reveals that most are Jurassic-Tertiary, with key examples in countries such as Australia, New Zealand, Indonesia, China and the North Sea (Powell and Boreham, 1994). Macgregor (1994) defines restrictions on these oil-prone coals using paleobotany and paleoclimate: An association of angiosperms of Tertiary age within 20° latitude of paleo-equator, and an association of gymnosperms from Late Jurassic-Eocene formed on the Australian plate and associated plates. In Colombia we have seen that some coals possess dominance of macerals rich in hydrogen and have chemical and petrographic features needed to be source rocks for liquid and gas hydrocarbons (Bandon and Giraldo 1989, Bandon et al 2004, Arango 2004, Bandon 2007, Bandon and Gorin 2012, Caro 2013).

In this sense, research is required that results in a true evaluation of hydrocarbon source potential in the different Colombian coals and can complement existing

theories. That is why an alternative in Amagá Formation coals is proposed, the Sinifaná Basin, where there have been some studies on the subject and all have concluded that there is true hydrocarbon generation, however these studies have been done on samples collected in outcrops and in front of mining exploitation, which could present variation (due to exposure to surface conditions). There has not yet been work done using horizontal drilling, before mining, following a coal seam, in order to see the lateral variations from the conditions of its formation including thermal maturity, hydrocarbon content, quality and quantity. It is also necessary to expand the knowledge of the behavior of lithotype associations that control the generation and storage of gaseous hydrocarbons in coals of Amagá Formation.

It is necessary to perform the analysis with samples taken in a horizontal drilling following a coal seam and supplement the existing information to understand the flow and behavior of hydrocarbons generated by the sedimentary organic matter. In this sense, the research questions for which answers are sought with this study is: What is the lateral variation of the coals and what is the potential for hydrocarbon generation in the Amagá Formation? How can the flow and the concentrations of oil and gas generated by the coals in the Amagá Formation be characterized?

Exploration of Miocene biomarkers in cored sedimentary rocks from IODP Expedition 317, Canterbury Basin, New Zealand

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Integrated Ocean Drilling Program (IODP) Expedition 317 to the Canterbury Basin, on the eastern margin of the South Island of New Zealand, provided the opportunity to study sediment geochemistry in contrasting depositional settings, from mid-shelf to upper slope sedimentary rocks. The expedition recovered sediments from the Eocene to the Holocene. A particular research focus was on the sequence stratigraphy of the sedimentary package, which recorded a time when global sea level change was dominated by glacioeustasy. The main goal of this research was to provide the first organic geochemistry results for the cored Miocene

sediments from this expedition. The comprehensive biomarker picture from these cores enables a better understanding of the organic matter origin in the Canterbury Basin, as well as the depositional and post-depositional processes involved.

Upper Miocene to Holocene sedimentary sequences were cored in a transect of two drilling sites on the continental shelf and one on the continental slope. Current research involves solvent extraction of organic matter (OM) from Miocene samples by using the Accelerated Solvent Extractor (ASE300), and the fractionation of OM into aliphatic hydrocarbons, aromatic hydrocarbons and polar compounds. The next step in the research is identification of organic compounds using gas chromatography-mass spectrometry (GC-MS) and high-performance liquid chromatography (HPLC).

Total organic carbon content for analysed samples is generally low with only a few spot samples on the continental slope having higher values. To determine the origin of the organic material, as well as the thermal maturity gradients in these three sites, hydrocarbons including biomarkers have been extracted from 40 samples. Relatively low amounts of extractable OM were detected. There is good preservation of C₁₁ to C₃₄ alkanes, with a slight-moderate predominance of odd-over-even chain length for long-chain n-alkanes that suggests some higher plant input.

The pristane (Pr) and phytane (Ph) ratios for all cores indicate variable oxygenation conditions from anoxic to suboxic. Thermal maturities of the core sediments were calculated using the Pr/n-C₁₇ and Ph/n-C₁₈ ratios, and these indicate increasing thermal maturity with depth, as well as some possible biodegradation of the OM. Depositional environment and organic matter input can also be determined by the abundance of C₂₇-C₂₉ regular steranes in the samples, as well as the C₃₀ sterane index and the C₃₁/C₃₀ hopane ratio. Varying inputs of organic matter were identified for the Miocene sediments in the cores. Acyclic biomarkers indicate mainly marine biological input for the middle Miocene samples. Upper Miocene samples predominantly were defined by high terrigenous input. These ratios suggest a primary marine depositional environment for all the sediments, although the type of organic matter was likely often of terrestrial origin. The amount and distribution of the aromatic hydrocarbons suggest numerous origins of the organic matter, as well as diverse levels of biodegradation.

The research provides a unique opportunity to study the main aspects of organic petrology including origin, occurrence and history of the organic matter in the sedimentary rocks from the Miocene epoch. The strong evidence regarding the biomarker composition of the sediments will provide information regarding definition of organic facies, paleogeography, and geothermal history of the Canterbury Basin, New Zealand.

Oil-bearing fluid inclusions in Archean carbonates: A petrological framework to investigate a long extinct biosphere

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During the past 600 million years petroleum reservoirs accumulated in Late Proterozoic and Phanerozoic sedimentary basins. Petroleum generation is largely controlled by time, temperature, and the availability of organic matter. It was thought that Archean (>2.5 billion years) petroleum deposits would have long since been destroyed, or simply never existed due to the presumed insufficient amounts of organic matter. However, there is mounting evidence for the presence of oil (and gas) before 2.5 billion years [1].

One line of evidence comes from oil-bearing fluid inclusions (also known as oil inclusions), which have been found in Archean sedimentary rocks [2]. These oil inclusions are hosted within cavities in calcite, dolomite, feldspar, and quartz minerals, which makes them relatively stable against the influence of high temperatures and pressure. Because the still liquid oil is almost unaltered and protected against degradation processes, it provides a key target for organic geochemical analyses, including biomarker analysis [3]. Biomarkers are organic compounds that are used to trace former life and that provide information about past environmental conditions [4]. However, biomarker signals are prone to be overprinted by later adulterants and contaminants in exposed rocks and drilled cores [5,6]. Only recent, clean drilling techniques were employed to collect reliable sample material.

In 2012 drill cores were recovered from three boreholes in the frame of the deep time drilling project of the Agouron Institute. These cores provide the first contamination-free samples drilled from the Pilbara Craton. In the first part of my project I have

characterised Archean carbonates from the drilled cores, which are host rocks to oil inclusions. The carbonates were characterised using optical, UV, and secondary electron microscopy (SEM/EDS), as well as laser ablation. The second part of my project is the analysis of biomarkers from the oil inclusions I discovered using gas chromatography-mass spectrometry (GC-MS) with low detection limits and system blank levels [3]. The main aim of this analysis is to determine why oxygen initially began to rise and how it is related to early evolutionary processes.

In previous studies simple petrographic methods to constrain the origin of organic material were neglected and biomarkers in fine-grained rocks were analysed without detailed petrographic assessment. This has led to conflicting and doubtful results [7]. Therefore, it is crucial to characterise potential host rocks carefully in order to assess their burial and tectonic histories. This will help to identify the rock structures in which biomarkers are hosted and whether they can be interpreted as biomarkers, later adulterants, or contaminants. In two of the three boreholes several carbonate layers were found, intersecting massive metamorphic rocks. The fine grained metamorphic rocks were believed to possibly contain biomarkers, based on previous work on nearby commercial drill holes, but that has been disproven by a recent study [6]. Hence, the carbonate layers are probably the only structures in which biomarkers may be found.

In general, the carbonates include primary (sedimentary) and secondary (later vein) carbonates. All primary carbonate layers consist of microcrystalline dolomite and no straight grain boundaries are visible. This suggests that the original carbonate was likely recrystallised various times. This is due to the exposure of higher temperatures and pressure, which is consistent with previous observations [e.g., 8]. As expected, no oil inclusions were detected in the primary carbonate.

However, oil inclusions have been found in the secondary carbonates, which mainly consist of blocky and fibrous calcite. These oil inclusions are rare, very small (8 to <0.5µm), and the very dim fluorescence under UV illumination indicates their potential alteration. This hints at the exposure of the secondary carbonates to high temperatures and pressures, which is reinforced by the existence of twinning and deformation lamellae in the crystal structures. A second type of vein carbonate that holds oil inclusions consists of dolomite and quartz grains. Here, oil inclusions were only

detected in the quartz grains, which suggests a vein genesis different from that of the calcite veins. So far, these two types of veins are the only carriers for oil inclusions that have been detected in the drilled cores of the Pilbara Craton.

The sedimentary successions in which the oil inclusions have been found were dated at 2.55-2.72 Ga [e.g., 9,10]. However, since the grade of recrystallisation is less distinct in the secondary carbonate, the age and origin of these veins and the oil are not known. Unfortunately, assessed U and Pb concentrations were too low to date the age of the veins, but accompanying bitumens still might yield higher concentrations. To determine the origin of the secondary carbonate $\delta^{13}C$ and $\delta^{18}O$ analyses will be conducted.

Subsequently, oil inclusions will be analysed using biomarkers to assess the composition of the Archean biosphere. This project is the first to investigate the organic geochemistry of oil which was produced before Earth's atmosphere contained free oxygen, which emphasises the importance of carefully investigating the host rocks.

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Palaeo-environmental and palaeoclimatic studies of Palaeogene sediments and oils, Upper Assam Shelf, India

Arka Rudra, PhD student, IIT Bombay, India

The Palaeogene period marks the evolution of terrestrial ecosystems with concurrent changes in climatic and tectonic conditions. The Assam Basin, India records such megafloral diversities which are reflected by biomarkers relations within the source rocks and crude oils. The Upper Assam Shelf hosts two major petroleum systems of Palaeocene to Mid-Eocene (Langpar and Sylhet Formations) and Late Eocene to Oligocene (Kopili and Barail Formations) age (Raju and Mathur, 1995).

Globally the Palaeocene-Eocene boundary (~55Ma) and early-Eocene time witnessed changes in palaeoclimatic conditions associated with rapid

warming, profound changes in ecosystem and major perturbations in the carbon cycle. This event also recorded major palynofloral diversification (Jaramillo et al., 2010).

The Eocene-Oligocene transition (~34Ma) is represented by global ice house where global grasslands expanded and tropical broad leaf forests were restricted to the equatorial belts and a major extinction in marine palaeobiotas. The position of Indian subcontinent during the Palaeogene period was within the tropics.

The present study validates whether there were any major palaeo-ecological and climatic shifts within a tropical setting and its imprint in the source rock characteristics. The study will also throw light on the evolution of terrestrial biomass concurrent with changes in global temperatures. The investigations of the present study will be carried out using biomarkers with the help of GC-MS, palynology and compound specific isotopic studies of individual biomarkers by GC-IRMS.

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**Congratulations to all four Spackman Awardees.
We look forward to seeing their research progress successfully!**



John Castaño
Honorary Member Award
2012

Professor Colin Ward



Judith Potter (VP TSOP) presents the Award to Colin Ward at the 2012 Beijing Meeting.

The Society for Organic Petrology nominated Professor Colin Ward for the 2012 John Castaño Honorary Membership Award. Colin has made significant and lasting contributions to the field of coal geology in research, service, and teaching.

From 1963 to 1966 Colin worked as a student geologist with the Joint Coal Board of New South Wales. In 1967 he received his Bachelors of Science (Honours Class 1) from the School of Applied Geology at the University of New South Wales (UNSW), and was also awarded the University Medal in Applied Geology. He went on to work as a research scholar and part-time lecturer in the School of Applied Geology at UNSW, and completed his Ph.D. in 1971, with a thesis titled "Mesozoic Sedimentation and Structure in the Southern Sydney Basin".

From there Colin joined the New South Wales Institute of Technology (now called the University of Technology, Sydney) as a Lecturer in Geology, developing a teaching program in sedimentary geology, including an undergraduate coal geology program. In 1979 he became Senior Lecturer at the Institute where he remained until 1984. During this time, Colin also had several visiting positions while on study leave, including

Special Research Associate in the Coal Section of the Illinois State Geological Survey in 1975 and Visiting Associate Professor in the Department of Geology at the University of Kentucky in 1980, which was supported by a Fulbright Travel Award.

In 1984 Colin returned to the University of New South Wales first as a Lecturer in the Department of Applied Geology, becoming Senior Lecturer in 1985, Associate Professor in 1992, and finally Professor in 2004. He also served as the Head of the Department from 1993 to 1997. In 1988 Colin's time was split between being periods as a Visiting Professor at the Department of Earth Sciences at the University of Sheffield in the UK and a Visiting Scientist with the CSIRO Division of Energy Technology in Australia. Colin then took on the role of Head of the School of Geology at the University of New South Wales from 1999 until 2001, and continued on as Professor of Geology at UNSW until his formal retirement in 2006. He is currently a Visiting Professorial Fellow at the University of New South Wales and a Visiting Scientist at the CSIRO Division of Energy Technology, and continues to lecture for courses in coal geology, petroleum geology, sedimentary environments, sedimentary petrology, clay mineralogy, and energy resources. During his time at the University of New South Wales, Colin supervised or co-supervised 12 PhD, 7 MSc and 25 BSc Honours students, all of whom have gone on to build their own careers in different areas of industry or research activity.

Colin has authored over 135 refereed journal articles and 90 full-length conference papers on his research findings, plus more than 100 other articles, reports and conference abstracts. These papers cover a vast spectrum of topics within the discipline of coal geology, including the composition of coal organic matter, the nature, occurrence and impact of minerals and trace elements in coal, coal seam gas, geomechanics and mining hazards, and the somewhat arcane world of coal ash and its properties. Many people will be familiar with his text *Coal Geology and Coal Technology*, a milestone work originally published in 1984 and re-issued in CD form in 2002. This is a practical textbook directed at coal geology, including the organic and inorganic composition of coal and the many applications of coal science, as well as the role of geology in coal exploration, mining, preparation and use.

Colin was also co-editor of monographs such as *Geology of Australian Coal Basins* (1995), *Geology in*

Longwall Mining (1996) and Coal Combustion Products Utilization Handbook (2007 and 2014).

His research expertise and academic credentials have thrust him into many significant bodies in the industrial and mining sectors as well as academia, with involvement in the Standards Association of Australia, the Coalfield Geology Council of New South Wales, the Australian Council of Chairpersons of Earth Science Departments, the Australian Institute of Geoscientists, the Sydney Universities Consortium of Geology and Geophysics, and the Geological Society of Australia.

Colin has been made Fellow of several groups, including the Australasian Institute of Mining and Metallurgy in 1981, the Australian Institute of Geoscientists in 1995, the Geological Society of America in 2011 and the Geological Society of Australia in 2012. He was also chosen to receive the Award for Excellence in Coal Geology from the Coalfield Geology Council of New South Wales in 1998, and the Gilbert H. Cady Award from the Coal Division of the Geological Society of America in 2010.

Of course, there is also Colin's extensive involvement in The Society for Organic Petrology. Colin served as President of TSOP in 2004-2005 and Chair of the Research Committee, including administering the Spackman Award from 2008 to 2014. Colin has served as convener of two successful TSOP Annual Meetings in Sydney, Australia in 2004 and 2014. He also shared the Ralph J. Gray Award for the best paper in organic petrology in 2011. For these reasons, TSOP has chosen to honor Colin Ward's numerous, significant and ongoing contributions to the field of coal geology with the 2012 John Castaño Honorary Membership Award.



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John Castaño Honorary Member Award 2014

Dr Maria Mastalerz



The Society for Organic Petrology nominated Maria Mastalerz for the 2014 John Castaño Honorary Membership Award.

Maria hails from the small village of Murawiec in eastern Poland and attended a geological high school in Kielce. After a brief flirtation with studying International Trade, she chose to continue with geology studies at the University of Wrocław, specializing in stratigraphy and sedimentology. Her Master's thesis '*Geological setting of the Świerzawa Graben, North Sudetic Basin, Poland*' won the Award of Rector of Wrocław University for outstanding MSc thesis. After receiving her MSc in 1981, Maria was offered an assistant lecturer position at the University of Wrocław, and between 1981 and 1987 taught classes on coal and petroleum geology, ore microscopy, and mining and mineral resources. During this time she also started work towards her PhD in coal geology at the Silesian Technical University in Gliwice.

In 1986 Maria was offered a British Council Fellowship at Newcastle-upon-Tyne University in England. Working with Professor Duncan Murchison and Mike Jones in the organic petrology lab at

Newcastle-upon-Tyne was a life-changing experience for Maria. During her nine month Fellowship, she completed all the analyses towards her doctorate, learned English and wrote her first article for an international journal. In 1988, Maria received her PhD in Mining Geology from Silesian Technical University and her thesis, '*Depositional conditions of the coal seams of the Wałbrzych Basin, SW Poland*' received a Polish Ministry of Education award. After receiving her PhD she began work as an assistant professor at the University of Wrocław. Between 1988 and 1990, Maria taught the petrology and sedimentology of coal, estimation of coal resources, ore mineralization in magmatic and metamorphic rocks and the organic petrology of oil shales.

In 1990, Marc Bustin offered Maria a post-doctoral position at the University of British Columbia in Vancouver, Canada. Maria worked in Bustin's lab on many projects including electron microprobe studies of coal, graphitization of coal, coal chemistry, organic petrology and geochemistry, elemental and molecular chemistry of kerogen with reference to petroleum exploration, fluorescence of conodonts as a tool for petroleum exploration and the role of organic matter in hydrothermal systems. The four years of research Maria conducted with Marc resulted in the publication of more than 20 papers in international journals.

Maria joined the staff of the Indiana Geological Survey as a research scientist in 1994, where she is still working today. Maria is currently a Senior Scientist with the Survey and an Adjunct Professor in the adjoining Department of Geological Sciences at Indiana University. She conducts research on almost every imaginable aspect of coal and shale geology, including organic and inorganic petrology, geochemistry, coal utilization, shale gas and coal bed methane. In the year 2000, Maria received a Visiting Erskine Fellowship at the Department of Geological Sciences at the University of Canterbury in New Zealand, spending 6 weeks working on New Zealand coals with faculty including Tim Moore.

Maria has many current projects including a U.S. Department of Energy project on shale porosity and catalytic gas; a European Union sponsored project on underground coal gasification; a National Institute for Occupational Safety and Health project on mine safety; a Schlumberger sponsored project on the heterogeneity of shales using petrographic, geochemical and geotechnical methods; an ArcelorMittal sponsored project on coking

and a project sponsored by the University of Calgary's Tight Oil Consortium to characterize organic matter in shales. She collaborates with industry, universities and institutions in the US and internationally and provides geologic information to governmental agencies and the general public.

Throughout her career (so far), Maria has authored or co-authored 2 books, 6 special volumes, 11 book chapters, 168 papers in scientific journals (including 59 as senior author) and 38 Indiana Geological Survey publications. She has reviewed countless articles and books and is an associate editor of the International Journal of Coal Geology, as well as a member of a number of organizations such as the American Society for Testing and Materials (ASTM), Professional Geologists of Indiana, Geological Society of America, American Association of Petroleum Geologists and, of course, The Society for Organic Petrography.

Maria's research has been awarded many times, including the Organic Petrology Award in 2004, presented by the International Committee for Coal and Organic Petrology (ICCP) in recognition of her outstanding contributions to organic petrology and leadership in promoting the development and application of innovative methodologies in the study of coal. The Geological Society of America chose to award Maria the Gilbert H. Cady Award in 2008, presented to individuals who make outstanding contributions to the field of coal geology. Maria is both the youngest person to receive this award and only the second woman to be honored.

Throughout her career, Maria has hosted and mentored many students from the USA and other countries and has served on 4 Masters and 13 PhD committees. She is an excellent educator who actively engages and supports students as they tackle the world of scientific research. Many of her students work in academia and are sought after in the petroleum industry. Maria shares her knowledge with anyone who knocks on her door and gives not only guidance but also inspiration and does so with modesty and patience.

When it comes to TSOP, Maria has made many contributions to the society, serving as a Councilor from 1997-1999, President-Elect 2001-2002 and President from 2002-2003. She successfully hosted the 17th Annual TSOP Meeting in 2000 in Bloomington, Indiana and co-hosted the 22nd Annual TSOP Meeting in Louisville, Kentucky in 2005.

Maria's passion for pushing science forward and dedication to her students make her a well-deserved recipient of the highest honor of TSOP with the 2014 John Castaño Honorary Membership Award.

October 5-8: 32nd Annual International Pittsburgh Coal Conference, Pittsburgh, PA, USA.
www.engineering.pitt.edu/pcc/

November 1-4: Geological Society of America Annual Meeting, Baltimore, Maryland, USA.
www.geosociety.org/meetings/2015/

Please send in meeting, short course and special event announcements to the Editor!

CALENDAR OF EVENTS

www.tsop.org/cal.htm



2015

April 20-24: 27th International Applied Geochemistry Symposium. Tucson, Arizona, USA
<http://www.27iags.com/>

May 4-7: World of Coal Ash Conference, Nashville, Tennessee, USA.
www.worldofcoalash.org/

May 31 – June 3: AAPG Annual Convention & Exhibition. Denver, Colorado, USA.
www.aapg.org/events/conferences/ace

August 16-21: 25th Anniversary Goldschmidt Geochemistry Conference, Prague, Czech Republic.
<http://goldschmidt.info/2015/index>

September 19 – 26: 32nd Annual TSOP Meeting, Yogyakarta, Indonesia. See website for details!
<http://tsop2015.ugm.ac.id/>

For more geology event information, see:
calendar.agiweb.org/index.html

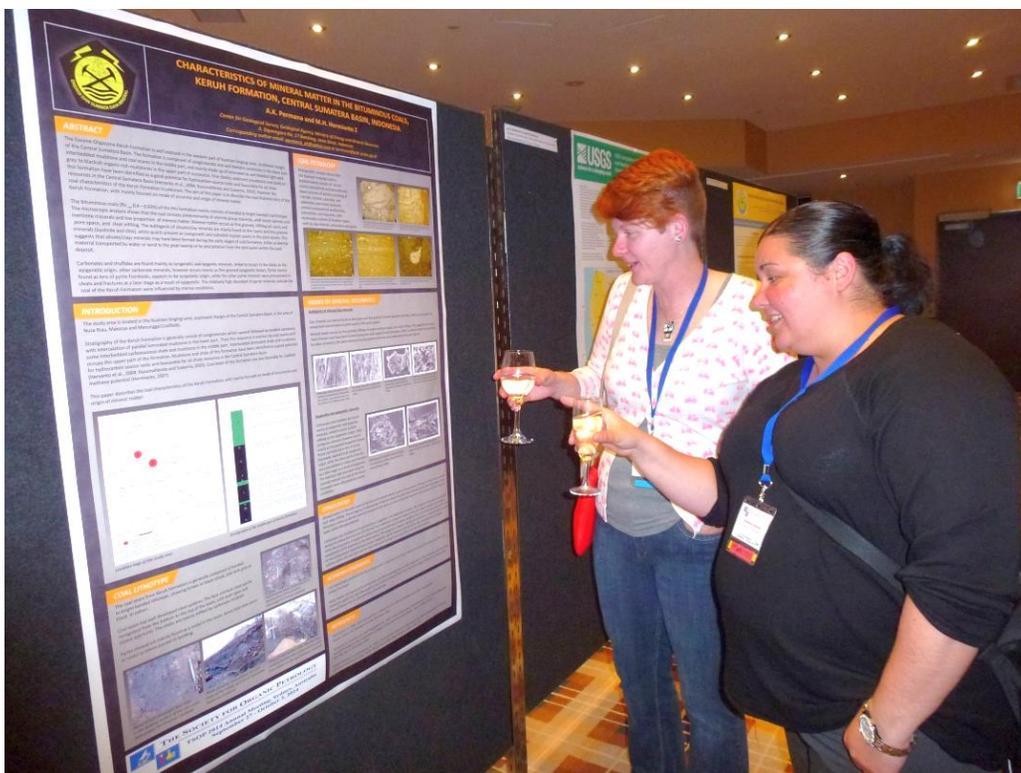


Seasons Greetings

SYDNEY TSOP MEETING PHOTOS



Group Photo: Delegates attending the Sydney Meeting. Courtesy of Rydges World Square Hotel.



Rachel Walker (left) and Anastasia Dmyterko (right) checking out one of the posters during the Icebreaker Reception. Photo courtesy of Colin Ward.

TSOP President Judith Potter (right) and Vice-President Shifeng Dai (left) presenting the John Castano Award to Agneiszka Drobniak, representing Maria Mastalerz, who was unable to attend the meeting. Photo courtesy of Colin Ward.





Participants on the Hunter Valley field trip at outcrop of the Great Northern coal seam, Catherine Hill Bay. Photo courtesy of Colin Ward.



Fantastic shot of the Sydney Opera House from the meeting dinner cruise of the harbor. Photo courtesy of Agnieszka Drobnik.