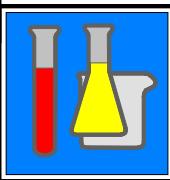




THE SOCIETY FOR ORGANIC PETROLOGY



NEWSLETTER

Vol. 35, No. 3

September, 2018

ISSN 0743-3816

36th TSOP Annual Meeting

September 7 – 11, 2019
Bloomington, Indiana, USA



Sample Gates at Indiana University, Bloomington.
(photo by Agnieszka Drobniak).

TSOP Annual Meeting



**September 7 – 11, 2019
Bloomington, Indiana, USA**

Website coming soon!

The 36th Annual Meeting of The Society for Organic Petrology will be held in Bloomington, Indiana, USA from September 7 to 11, 2019. Bloomington is a vibrant little town with a diverse and rich culture situated in the south-central Indiana. Our town is a home to the Indiana University (IU). University's campus, established in 1820, is located in the heart of the Indiana Limestone Heritage Trail, and it was recognized as one of the five most beautiful collegiate campuses in the USA. Please join us in Bloomington as we celebrate 36th TSOP Annual Meeting and explore the beauty and history of Indiana's limestone!

Organizing Committee:

Maria Mastalerz, Agnieszka Drobniak, Arndt Schimmelmann, Tisa Bowden, Indiana University Conference Services

Host Organization:

Indiana University, Bloomington

Conference Venue:

Indiana Memorial Union, Indiana University, Bloomington

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 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. For the best prices on subscriptions to AGI's *Earth*, see their web site at www.geotimes.org/current.

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

The Society for Organic Petrology Newsletter

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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.

Contact the Editor:

Rachel Walker

e-mail: drrachelwalker@gmail.com

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:

The Society for Organic Petrology,
 c/o American Geological Institute,
 4220 King St., Alexandria,
 VA 22302-1520 USA

Newsletter Submission Deadlines

December Issue: Dec. 5th, 2018

March Issue: March 5th, 2019

June Issue: June 5th, 2019

September Issue: Sept. 5th, 2019

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member society of



TSOP Membership Dues



TSOP dues payments are due on or before **January 1st each year** and we encourage you to check your dues status and make your payment 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 credit card payment processing is via PayPal and you don't need a PayPal account to use it. 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_TSOP.html



www.facebook.com/OrganicPetrology



**The Society for
Organic Petrology**

2018**TSOP****John Castaño****Honorary Membership****Award**

The highest honor of The Society for Organic Petrology, provided for in its Bylaws, is Honorary Membership. It is awarded to persons distinguished in a scientific discipline of significance to the Society, in recognition of their contributions in research, service to TSOP, or education. In 2005 the Honorary Member Award was named the John Castaño Honorary Membership Award.

For 2018, the Castaño Award winner is **Peter Warwick**. Peter was born in Clinton, North Carolina, and graduated from Clinton High School. He enrolled in Campbell College before transferring to North Carolina State University, where he received a B.S. degree, with a major in political science and a minor in geology. Dr. Arthur Hayes, Campbell College, taught introductory geology, and ignited Peter's love of geology. Following graduation Peter worked both as a radio announcer and high school teacher until he entered the graduate program at N.C. State University and received a Master of Science in Geology under the direction of Dr. Vic Cavaroc.

He went on to receive a PhD in Geology under the direction of Dr. John Ferm from the University of Kentucky (UK). His area of focus was on sedimentology, clastic depositional environments, coal geology and organic petrology. At N.C. State, the "Fermite" tradition began. First working with Vic Cavaroc and Romey Flores in the coal fields of the western U.S., and finally with John Ferm at UK. Vic and Romey were also students of John Ferm. Peter worked the coal-bearing outcrops of the Williston and Powder River Basins in the 1980s. After completion of graduate studies, Peter worked as a Post Doc with Ron Stanton at USGS and continued his sedimentologic and petrographic studies of the Wyodak-Anderson coal interval in the Powder River Basin.

Following the Post Doc Peter joined the USGS where his 30+ year career has focused on subjects including western U.S. coal field stratigraphy, sedimentology and organic petrology, International energy exploration and characterization, Gulf of Mexico coal, oil and gas resources, and underground storage of carbon dioxide. Notable work Peter performed at the USGS includes: The geology and petrography of low-ranked coals; Coal, oil, and gas assessments of the on-shore U.S. Gulf of Mexico

region; Coal-bed methane desorption techniques and resource assessments; National assessment of geologic carbon dioxide storage resources. Besides domestic work in the United States, Peter has worked on energy exploration and resource evaluation projects in multiple countries, including: Armenia, Bangladesh, Chile, China, Czech Republic, India, Mexico, Pakistan, Poland and South Korea.

Peter has been a member of and served roles in a number of scientific societies including the Geological Society of America, the American Association of Petroleum Geologists (AAPG), the American Society for Testing and Materials (ASTM), The Geochemical Society, the Society for Sedimentary Geology (SEPM) and the Geological Society of Washington.

Peter has also had many roles within TSOP, including Annual Meeting Committee (1994, 1995), Chair of Annual Meeting Organizing Committee (2003), Secretary/Treasurer (1998-2002), Vice President (2002-2003), President-elect and President (2004-2006), Representative American Geological Institute Government Affairs (2006-present), Ralf Gray Best Paper Award Committee (2016-present; Chair 2018), Spackman Award (for Student Research) Committee member (2016). Peter was previously honored with a Distinguished Service Award from TSOP in 2009 and has been awarded by many other societies for his work.

The TSOP Council is proud to award the John Castaño Honorary Membership Award to Peter Warwick. Congratulations Peter!



Peter Warwick (left) being presented with the Castaño Award at the 2018 TSOP Luncheon.

Photo courtesy of Shifeng Dai.

TSOP Annual Meeting Awards

Student Travel Awards: This award is designed to assist students in attending the annual meeting to present their research. Four awards are given each year in a competitive judging process. This year the four students awarded were: ZEYANG LIU (Durham University, UK), MALEK RADHWANI (Faculty of Sciences of Tunis, TUNISIA), YAN XIAOYUN (University of New South Wales, AUSTRALIA), and BALRAM TIWARI (Indian Institute of Technology, INDIA).

Furthest Traveled Award: This award is presented to the meeting attendees who traveled the furthest to reach the meeting location. This year the winners were Olga Patricia Gomez Rojas, Carlos Guillermo Perea Solano, Elkin Mauricio Arboleda Muñoz, Jacobo Henao Restrepo and Astrid Blandon Montes, all hailing from Columbia.



Furthest Travelled Awardees. Photo courtesy of Shifeng Dai.

Danielle Kondla Best Student Presentations:



This award recognizes best student oral and poster presentation during TSOP annual meeting. Usually two awards, \$300 for the oral presentation and \$200 for the poster presentation, are given during TSOP conference dinner. With the permission of the Kondla family, the award was named after Danielle Kondla (1982-2017) in honor of her achievements and contributions to TSOP. This year the winners were:



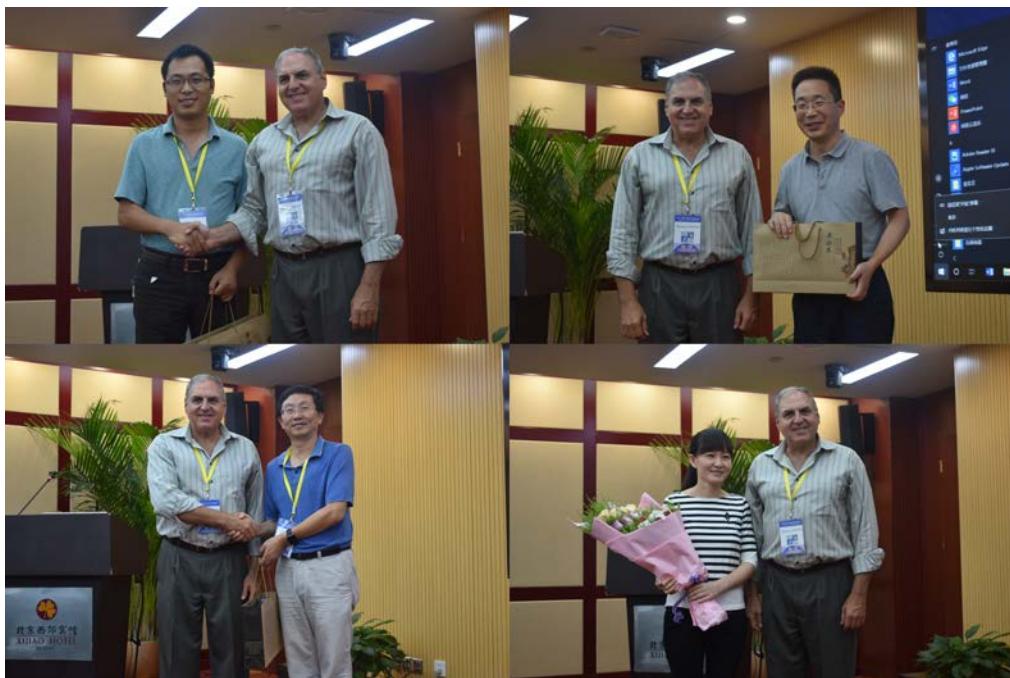
BEST ORAL PRESENTATION:
Junqing Chen, China University of Petroleum, China. "*Hydrocarbon expulsion evaluation of highly mature carbonate source rocks: Implications for old Ordovician carbonates exploration in the Tabei Uplift, Tarim*"

Photo courtesy of Shifeng Dai.

POSTER PRESENTATION: Wang Ye, China University of Petroleum, China. "*Raman Spectroscopy for thermal maturity of analysis of graptolite*"

Distinguished Service Award: The Distinguished Service Award winner for 2018 was Judith Potter of JP PetroGraphics, Canada.

Thank you to the Organizing Committee and all the wonderful student volunteers!



35th TSOP Annual Meeting Highlights

The 35th Annual TSOP Meeting was held in Beijing, China from August 17-21, 2018. This was a great conference with strong attendance, especially from students. TSOP would like to extend both thanks and congratulations to the Organizing Committee for conducting such a successful conference.

Ice Breaker:



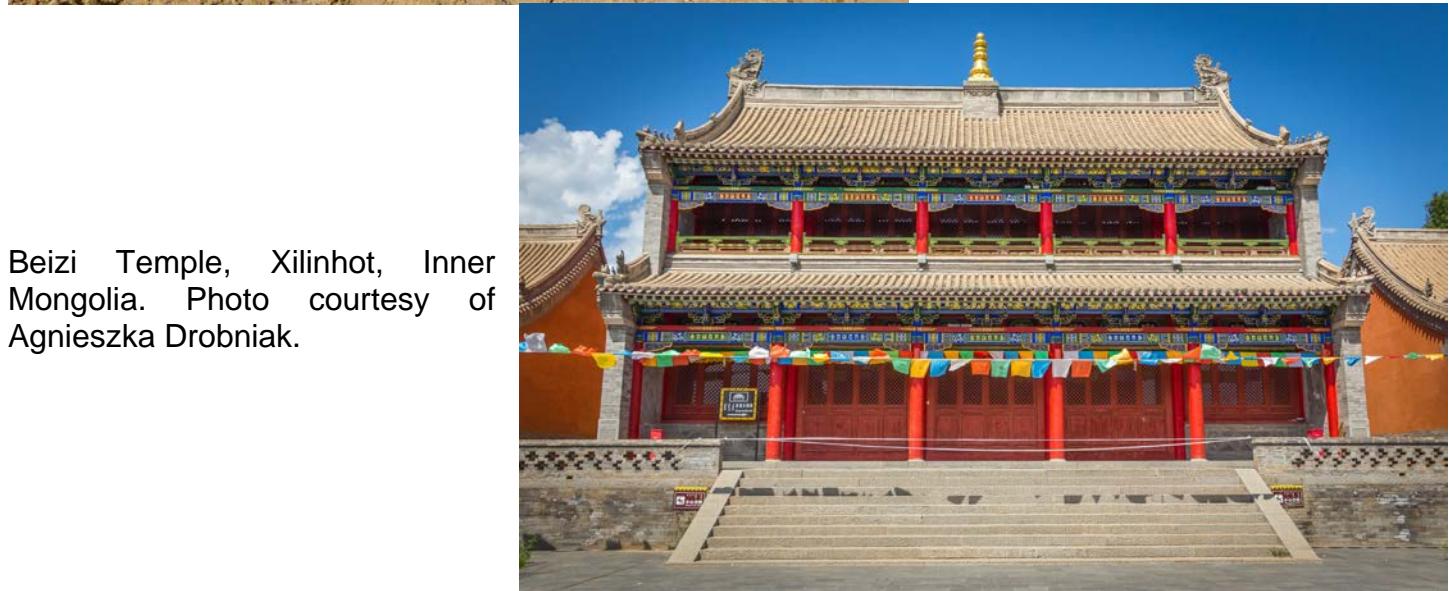
Students provided entertainment and culture at the Ice Breaker, including performances of traditional Chinese music, dancing and opera. Photo courtesy of Shifeng Dai.

Attendees of the Coal Courses. Photo courtesy of Shifeng Dai.





Wulantuga Coal Mine Field Trip,
Inner Mongolia. Photo courtesy of
Agnieszka Drobniak.



Beizi Temple, Xilinhot, Inner
Mongolia. Photo courtesy of
Agnieszka Drobniak.



Fantastic food on field trip, Inner
Mongolia. Photo courtesy of
Agnieszka Drobniak.

More photos:
<https://www.tsop.org/photos.html>



Field Trip Group Photo, Hexigten UNESCO Global GeoPark, Inner Mongolia. Photo courtesy of Agnieszka Drobnik.

Environmental impact of coal handling in the coastal area of Gijon (Northern Spain): A petrographic approach

Isabel Suárez-Ruiz *; Alberto Pérez; Pelayo Tomillo; Dionisio Luis; Consuelo Amor
INCAR-CSIC. Francisco Pintado Fe 26, 33011-Oviedo. Spain.

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Introduction

Organic petrography contributes to the environmental pollution studies through e.g., identification of organic particulates/particles derived from activities related to coal such as coal mining, preparation, transport, blending, management and shipment, storage and utilization (e.g. Suárez-Ruiz et al., 2012). The importance of solid organic particles (particularly those from coals, its by-products and residues from utilization) in the environment derives from the existing relationships between these particulates and the concentration of the PCBs, PAHs, and PCDD/Fs organic pollutants (Yang et al., 2008). The coal and solid residues of coal utilization (chars and coke particles) also contain some hazardous trace elements (such as Hg, As, V, Se, etc.).

The coastal area of Gijon (Northern Spain) is one example of a polluted area related with coal handling. Gijon city is surrounded (**Figure 1**) by a coal power plant, a coal park, a cement industry using coal as a fuel, a steel industry with coke plants, and the activities developed at the El Musel, a commercial seaport that manages about 7 million tons of coal and coke per year (Port Authority of Gijon 2018). These industrial activities are among others, the source of carbonaceous dust storms affecting the city and the coast.



Figure 1: Left - Gijon city on the Cantabrian coast and location of samples (red points); Right - Pollution by coal and some coke at San Lorenzo Beach.

Objective, Sampling and Study Methods

The objective was to determine via petrographic analysis the environmental impact of coal handling transport, storage and utilization on the coastal area (San Lorenzo Beach, Cimadevilla, La Calzada and West Gijón as the most polluted parts of Gijón City, **Figure 1**).

Samples were taken from: the San Lorenzo Beach in April 2018 (samples M14-M18, M23) and the windows and buildings (May-June 2018) in Cimadevilla (samples V1-V3), La Calzada (V4-V6) and West Gijón (V7) neighborhoods. All the samples were prepared for petrographic analysis following a modified procedure of the ISO 7404/2 (2009). Petrographic analysis were conducted in optical microscopy, reflected white and polarized light (+ 1λ retarder plate), and oil immersion to identify the type of organic particulates in the samples. Point count determinations and vitrinite reflectance measurements were performed following the ISO 7404/3 (2009) and 7404/5 (2009), respectively.

Results

All the samples from San Lorenzo Beach, and the Windows and Buildings contained anthropogenic solid particles made up of different coal ranks, chars and coke (**Table 1, Figure 2**) in varying amounts. The distribution and percentages of these components in the samples depend on their geographical location and the proximity to the sources of pollution.

Table 1: Petrographic characteristics of the organic anthropogenic fraction from San Lorenzo Beach (samples M) and from Windows and Buildings (samples V)

| Samples | Vitrinite Reflectance (%) | Composition (%, vol. mmf.) | | |
|---------|---------------------------|----------------------------|--------|------|
| | | Coal | Chars | Coke |
| M14a | 0.88 | 100.0 | 0.0 | 0.0 |
| M14b | 0.86 | 100.0 | 0.0 | 0.0 |
| M15 | 1.22 | 100.0 | Traces | 0.0 |
| M16 | 1.23 | 94.0 | 6.0 | 0.0 |
| M17 | 1.37 | 90.5 | Traces | 9.5 |
| M18 | 1.15 | 93.4 | 0.0 | 6.6 |
| M23 | 1.22 | 98.5 | Traces | 1.5 |
| V1 | 1.45 | 78.1 | 13.1 | 8.8 |
| V2 | 1.34 | 60.9 | 33.7 | 5.4 |
| V3 | 1.17 | 70.3 | 22.5 | 7.2 |
| V4 | 1.35 | 51.5 | 46.5 | 1.9 |
| V5 | 1.07 | 51.8 | 46.6 | 1.6 |
| V6 | 0.61 | 44.9 | 51.8 | 3.3 |
| V7 | 1.22 | 64.4 | 21.8 | 13.9 |

San Lorenzo Beach: Coal is the main component of the organic fraction, ranging from 90% to 100%, followed by coke particles (0.0-14%) and chars (from traces to 6.0%). The dominant organic particle size is between 0.5-2.0 mm. However, in some areas of the beach rounded fragments of coals (M14 sample) of higher size are also found (\varnothing : ~2-4 cm) which is probably linked to a greater influence of tides and waves.

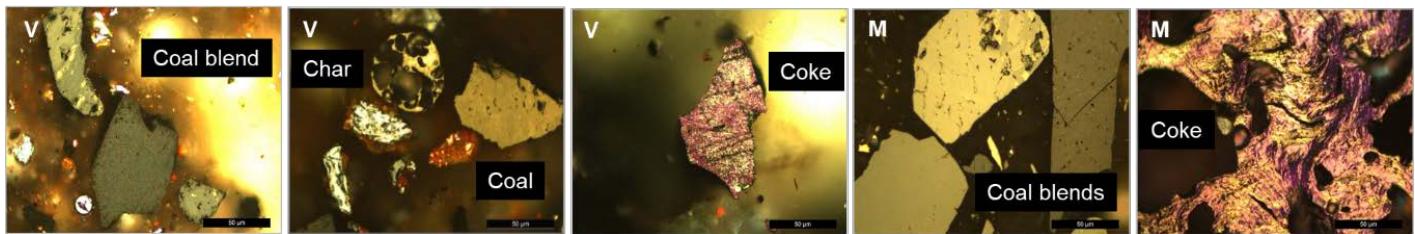


Figure 2: Images of the anthropogenic organic particles in V and M samples. Optical microscopy.
Long side of the images: ~200 μm

Windows and Buildings Airborne Particles: The organic fraction ranges from 14.0 to 40.0% being inorganics the predominant component in these samples. In the organic fraction coal is again the main component (45-78%), followed by chars (13-52%) and coke particles (2-14%). The high amounts of chars might be due to the proximity of the cement and the thermal power plants that are burning coal. The highest content in coke particles in some samples seem to be due to the proximity of the steel factory and the coke plants (**Figure 1**).

With the exception of M14a,b (from the San Lorenzo Beach) that are made up of large fragments of single coals, coal particles in all the samples (M and V) are blends of coals made up of subbituminous A coal, bituminous coals (low, medium and high volatile contents) and anthracite (**Figure 3**). The predominant coal rank is the bituminous coal. In samples from windows and buildings, anthracite coal rank is also significant.

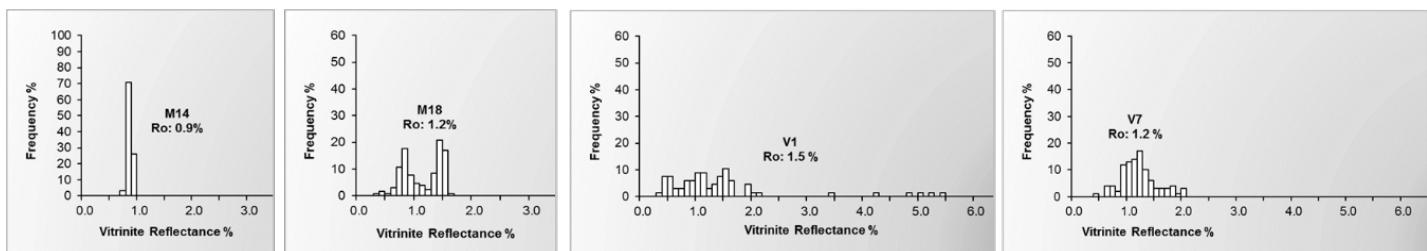


Figure 3: Reflectance distribution for coals in some M (San Lorenzo Beach) and V (Windows and Buildings) samples

Conclusions

All the samples from the sites San Lorenzo Beach and windows and buildings, contain an anthropogenic organic fraction (coal, chars and coke) which represents a significant environmental impact. The distribution of these anthropogenic particles in the samples makes possible to track the pollution sources:

1. Windows and buildings are polluted by airborne particles ($\varnothing: >60 \mu\text{m}$) where coal probably comes from the coal handled at the El Musel Seaport, Aboño Coal Park and other parks located at the facilities using coal. The high content in chars seems to be sourced by the cement and the thermal power plants located near to the sampled sites. The contribution of coal heaters that eventually still exist cannot be ruled out. The source of the coke particles could also be from handling coke at the El Musel seaport, although the high coke content in some samples points to the nearby steel factory as the main source.

2. San Lorenzo Beach. This site can also be polluted by organic airborne particles but the great particle size of the samples suggest that the main source of pollution could be the Aboño Coal Park but overall the loading and downloading of coal (and coke) from vessels at the El Musel Seaport. Currents, tides and waves are responsible for periodically dragging the material to the beach (**Figure 1**, right). This seems to be confirmed by the predominance of coal being the coke in very low percentages and chars almost non-existent. The potential contribution of some coal particles from a shipwreck in the vicinity of the beach 32 years ago cannot be ruled out.

References

Port authority of Gijon, 2018. <https://www.puertogijon.es/en/port/> (July 2018).

Suárez-Ruiz I., Flores D., Mendonça Filho J.G., Hackley P.C., 2012. Int. J. of Coal Geol. 98, 73-94.

Yang Y., Ligous B., Pies C., Achten Ch., Hofmann T., 2008. Chemosphere 71, 21578-2167.

Acknowledgements

This work was developed within the framework of the INCAR-CSIC and the University of Oviedo (Spain) agreement for the practical training of students. Some images included in Figure 1 (left side) are from Internet and El Comercio newspaper.



Hedberg Conference March 4 - 6, 2019 Houston, Texas

We are proud to announce an AAPG-sponsored Hedberg research conference focused on The Evolution of Petroleum Systems Analysis: changing of the guard from late mature experts to peak generating staff. The conference will take place on March 4 - 6, 2019 in Houston (Texas).

This Hedberg research conference will focus on the changes in petroleum systems analysis from the late 1970's to current day. The goal of this conference will be a "passing of the torch" with an exchange of ideas from experienced specialists to young professionals. The attendees will be a mix of seasoned experts with a depth of knowledge and historical perspective, and exploration and development petroleum systems staff on the learning curve. The last 30 plus years have seen tremendous change in the methods and technology applied on the analysis and evaluation of geochemistry data and on the building and evaluation of petroleum system models. This conference will provide an open forum where the field's pioneers will share their knowledge on the history and development of these tools and the up-and-coming petroleum systems staff will share innovative applications and new ideas.

The conference has been subdivided into 6 oral sessions (listed below) and an open poster session. In addition, there will be 3 keynote lectures from world experts who have pioneered petroleum geochemistry and petroleum systems modeling.

The conference co-conveners include Dr. Michael Abrams, currently a visiting professor at the Imperial College London with 35 plus years in both industry and academia, and Dr. Irene Arango, Senior Geochemist with Chevron's Energy Technology Company with 14 years of industry experience. The session chairs include Joe Curiale, Michael Hsieh, Humberto Carvajal, Mike Lewan, Zhiyong He, Matthias Greb, Mark McCaffrey, Faye Liu, Don Hall, Norelis Rodriguez, Andy Bishop, Catherine Donohue, Richard Patience, and Ozkan Huval.

Who Should Attend:

The attendees will be a mix of invited experts and specialists with a wide spectrum of experience. Attendance will also be open to selected petroleum geochemists and petroleum systems specialists from both industry and academia interested in understanding the changes and future of petroleum systems analysis.

Session Themes:

- Source Rock Analysis
- Molecular and Isotopic Evaluation of Hydrocarbons
- Basin Maturity and Migration Modeling
- Reservoir Geochemistry and Production Enhancements/Evaluation
- Geochemistry Logging and Well Site Geochemistry
- Integrated Petroleum Systems Analysis.

For further information contact Michael Abrams (m.abramstx@gmail.com) or Irene Arango (Irene.Arango@chevron.com).



Hedberg Conference 2019 – Call for Poster Abstracts

You are invited to submit an abstract for consideration as a poster at the Hedberg Conference on:

“The Evolution of Petroleum Systems Analysis: Changing of the guard from late mature experts to peak generating staff”

4th to 6th March, 2019
Houston, Texas

This Hedberg research conference will focus on the changes in petroleum systems analysis from the late 1970's to current day. The goal of this conference will be a "passing of the torch" with an exchange of ideas from experienced specialists to young professionals. The attendees will be a mix of seasoned experts with a depth of knowledge and historical perspective, and exploration and development petroleum systems staff on the learning curve. The last 30 plus years have seen tremendous change in the methods and technology applied on the analysis and evaluation of geochemistry data and on the building and evaluation of petroleum system models. This conference will provide an open forum where the field's pioneers will share their knowledge on the history and development of these tools and the up-and-coming petroleum systems staff will share innovative applications and new ideas. The website can be found here: <https://www.aapg.org/events/research/hedbergs/details/ArticleId/49053/the-evolution-of-petroleum-systems-analysis-changing-of-the-guard-from-late-mature-experts-to-peak-generating-staff>

Poster session theme: “Petroleum Systems Analysis – Past, Present and Future”

The following are some suggested topics which we would like to see addressed. However, all creative abstracts on any topic within petroleum systems analysis (petroleum geochemistry and basin modeling) are welcome.

“Past”

- i) Experienced specialists - dig out one of your old presentations from the 20th Century and present it again for the benefit of the young professionals. But in addition, include comments on what stood the test of time, and what you would do differently today.
- ii) Survival in the petroleum industry has proven to be a minefield, with regular periods with downturns and layoffs. What advice would the 30+ year generation have for the younger generation on how to survive, with examples?
- iii) “The most interesting or unusual basin/field/well I ever worked”. Show us something we have never seen before.

“Present”

- i) How have unconventional plays changed petroleum geochemistry and basin modeling? What do we do differently, what has remained the same? What new tools and methods do you find useful to address business questions in these plays? Do you have legacy methods applied in an unconventional way?
- ii) “My pet peeve”
 - a. Basin modeling - for example, is it a fair statement that while basin models work well in mature areas (data-rich) where you depend on them less, modeling is challenging in frontier basins (data poor) where it is needed most?
 - b. Petroleum geochemistry - for example, back calculation of original TOC and HI in mature sediments (plenty of methods which are very precise but not very accurate).
- iii) The value of integration with other disciplines and data (e.g. petrophysics, PVT data, downhole fluid and pressure data etc.) in both conventional and unconventional settings, from exploration to production.

“Future”

- i) What is the next generation of basin modeling tools going to look like? What improvements will promote reduced computation time, faster calibration and more accurate results and predictions from the basin models? What would be the role of Artificial Intelligence, semi/fully-automated calibration methods with increase in computational power and reduction of simulation times.
- ii) What new analytical methods will become routine and what kinds of problems will they solve that cannot currently be addressed?
- iii) What new analytical methods are overrated and will never become routine?
- iv) How can or will geochemistry reduce costs by replacing and/or complementing other relatively less cost-efficient industry tools and methods? What examples are there of high value and cost efficient analytical methods that would be beneficial in future improved market conditions?

Abstract format

Please submit your abstract as a Word document with a maximum of two pages of text, double spaced, and with one figure (optional).

Where to send your abstract

Abstracts should be sent to BOTH the poster session chairs:

Richard Patience (rp@aptec.no)

Ozkan Huvaz (ozkan.huvaz@shell.com)

Deadline for submission

October 31st 2018



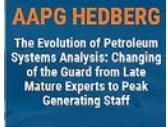
CALENDAR OF EVENTS

2018/2019



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

<http://www.tsop.org/events.html>

| | |
|---|---|
|  | <p>September 20-21 ICCP Short Course in Coal Petrology – Brisbane, QLD, Australia</p> |
|  | <p>September 23-29 70th ICCP Annual Meeting – Brisbane, QLD, Australia</p> |
|  | <p>October 15-18, 2018 2018 International Pittsburgh Coal Conference – Xuzhou, China</p> |
|  | <p>November 4-7, 2018 Annual GSA Meeting - Indianapolis, IN, USA</p> |
|  | <p>December 10-14, 2018 AGU Fall Meeting – Washington, D.C., USA</p> |
|  The Evolution of Petroleum Systems Analysis: Changing of the Guard from Late Mature Experts to Peak Generating Staff | <p>March 4-6, 2019 Hedberg Research Conference - Houston, TX, USA</p> |
|  The Society for Organic Petrology | <p>September 7-11, 2019 36th Annual TSOP Meeting - Bloomington, IN, USA</p> |

35th TSOP Annual Meeting
August 17-21, 2018—Beijing, CHINA



Attendee Group Photo for 35th TSOP Meeting. Photo courtesy of Shifeng Dai.