ASMS 2026 San Diego

Polymeric Materials & Energy, Petroleum and Biofuels Interest Groups Joint Workshop

"Advancements in Tools for Studying Materials-Based Catalytic Processes in Polymers and Energy"

WORKSHOP REPORT

Presiding: David Stranz (Sierra Analytics, Inc., Modesto, CA, USA) and Christopher P. Rüger (University of Rostock, Rostock, Germany)

Co-organizers: Anthony Gies (Consultant, Houston, TX, USA), Selim Gerislioglu (PPG, Monroeville, PA, USA), and Corinne DeMuth (Stepan, Northfield, IL, USA)

Date: Tuesday, June 2, 2026, 5:45–7:00 PM

Location: Room 4, San Diego Convention Center, San Diego, California

Attendance: Fewer than 30 attendees (estimated headcount by presiders)

Overview

The Polymeric Materials and the Energy, Petroleum and Biofuels Interest Groups held a joint evening workshop for the second consecutive year. The workshop was organized to examine how mass spectrometry, combined with advanced digital tools for data interpretation and visualization, can be applied to complex materials-based catalytic processes in synthetic polymers and energy. In the workshop description, the organizers noted that catalyst optimization depends on understanding catalytic mechanisms and thoroughly characterizing the resulting products, and that this information can then guide process adjustment and the tuning of material properties. Application areas named in the description included olefin polymerization, asphalt formulations, materials for coatings and foams, and energy production.

The workshop was planned as a panel-led session in which examples would be presented, followed by discussion of the strengths and limitations of current technology.

Summary of Program

Opening remarks: David Stranz and Christopher Rueger jointly opened the workshop and summarized the goals: four brief presentations followed by a Q&A panel discussion. Attendees were reminded to select interest group membership as part of their ASMS member details. A call for volunteers to replace Stranz and Rueger as coordinators for the coming term was also made

Because of difficulties in finding speakers to present on the chosen topic of catalysis, the organizers were forced to pivot to a general call for presntations on current topics in polymer and petrochemicals analysis.

Presentation 1: Matthias Linden (Linden CMS GmbH, Leeste/Weyhe, Germany) presented "Characterization of air sensitive catalytic matter by intact M+• ions via soft LIFDI-HRMS".

LIFDI (Liquid Injection Field Desorption Ionization) is one of the softest mass spectometric ionization techniques and is particularly suited for the analysis of reactive and unstable materials. The author described the technique, instrumentation, and gave several examples of its application.

Presentation 2: Christian Orlando (University of Rouen Normandy, Mont-Saint-Aignan Cedex, France) presented "Structural identification of micro- and nano-plastics with depolymerization and HRMS". The author decribed methods for chemical depolymerization of PET (polyethylene terephthalate) using DMAPA (dimethylaminopropylamine), an ester bond cleavage reagent, and the identification of depolymerization products using ESI-MS (Orbitrap) and MALDI-MS (9.4T FT-ICR-MS). PET containers could be differentiated based on previous contents, place of manufacture, and the presence of co-polyesters.

Presentation 3: Iqbal Imran (Neste Corporation, Porvoo, Finland) presented "Navigating the 'Unknown-Unknowns': Screening Complex Organics in Renewable Feedstocks via Non-Targeted LC-HRMS". Because of company restrictions on presenting confidential information, the author's talk focused more generally on the nature of the analysis problem posed in characterizing complex biomass-derived recycling feed stocks, some of the methodology used, and cost-benefit analysis of various approaches.

Presentation 4: Justin Dyer (University of Akron, Akron, OH USA) presented "Synthesis and Analysis of Poly(ethylene furanoate) (PEF): MALDI-MS", a proposed new "green polymer" which is a 100% biodegradable substitute for PET. The author described the synthesis procedures, physical and chemical properties of the resulting polymer, and the characterization of molecular weight distribution and end group composition by MALSI-MS.

Open Discussion

Due to the length of the presentations, there was unfortunately only a small amount of time remaining for discussion, and there were no questions.

Key Takeaways and Future Directions

The announced title for the workshop undoubtedly limited the attendance, since most of the interest would come from the industrial sector and many of those members were unable to attend the ASMS conference. Most of those in attendance were from academic organizations and primarily represented the petroleomics side of the joint workshop.

It is not clear if the joint workshop experiment for the past two conferences has been successful. Attendance continues to decrease and with as many as 15 competing workshops each night, conference attendees must decide which is more interesting and relevant.

Participant Feedback

Seven attendees responded to the ASMS post-conference survey for this workshop. With fewer than 30 people in attendance, this corresponds to roughly one quarter or more of the audience; the results describe these respondents only and should not be read as representative of all attendees. Respondents included two associate or full professors, two graduate students, one postdoctoral fellow, and two industry scientists. On a five-point scale (1 = poor, 5 = excellent), the six respondents who provided a rating gave the workshop a mean score of 4.17 for quality and 4.00 each for topics and format; no rating was below 3, and one respondent selected "no opinion" for each item. The one written comment described the presentations and discussion as interesting but noted that the respondent had nearly missed the workshop because its long title placed the synthetic-polymer focus at the end. The comment suggests that future workshop titles should state their primary subject area at the outset.

Interest Group Business and Announcements

Announcements were made on behalf of both the Polymeric Materials and Energy, Pertoleum, and Biofuels Interest Groups: 1) urging attendees to select the interest group in their ASMS member profiles to ensure receiving group e-mails and announcements, 2) urging poster and oral submitters for the 2027 annual conference to make their primary choice of topic keyword or session one that identifies the appropriate interest group, and 3) a call for new interest group coordinators to replace those currently leading the two groups.