



Institute for Combustion Science and Environmental Technology

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## Newsletter for *October 2004*

For better communication with our friends, we plan to send this newsletter to you every month to let you know what is happening at the Thermal Analysis and Combustion Laboratories at Western Kentucky University. This newsletter was suggested to us by one of our advisory board members.

We always appreciate your suggestions and comments. Please let us know if you do not wish to receive this newsletter, and we will remove your name from our mailing list.

### **Thermal Analysis Laboratory**

**The 32<sup>nd</sup> North American Thermal Analysis Society (NATAS) Conference was held in Williamsburg, VA on October 4-6.** Dr. Bob Howell, President of NATAS, reported during the recent business meeting that NATAS 2004 was a great success as judged by the number of technical presentations (~210) and the number of attendees (over 250), making this the largest attended NATAS conference. As we look forward to the promising future of our Society, the Executive Committee is planning improvements to the annual conference to better serve the needs of our membership. One significant change that will be of interest to the membership is that the venues for NATAS 2006 and 2007 will be hosted at a university campus. Specifically, the venue for 2006 will be at **Western Kentucky University in Bowling Green, KY**, and 2007 is planned for Michigan State University in East Lansing, MI. We believe that these new venues offer great promise to promote the interests and growth of the Society, and we wish to inform you of some of these benefits. Of paramount importance is the financial health of the society. The society has been operating on a break-even or loss basis for some time, and after careful, extended deliberations, the decision was made by the Executive Committee to move the NATAS business office to **Western Kentucky University** under the direction and guidance of Wei-Ping Pan. The financial impact of this move, beginning in late 2005, is expected to bring significant operational expense reductions to the society. You will be hearing more of this move in the coming months. Concurrent with this move is the change to a university venue for the annual technical conference. The Society will now self-manage the conference working in close collaboration with a champion of the society that is a resident of the host university. This volunteer effort will substantially reduce the \$40,000 conference management fee that the society now incurs to have the conference operated by a private firm. It is anticipated that these two changes will yield sizeable reductions in expenses, which will be to the benefit of our membership. The realization of these savings will allow us greater ability to subsidize invited speakers, hold down registration fees, improve web-based services, enhance educational thrusts, and more.

During the meeting, the Thermal Analysis Laboratory at WKU also presented four technical papers:

1. Nathan R. Whitely, Alan T. Riga, Mark Clauson, Kevin M. Williams, and Wei-Ping Pan "Qualitative Detection of Biological Species Using Electrochemical Methods," Proceeding of the 32<sup>nd</sup> NATAS conference, October 4-6, 2004, Williamsburg, VA, P65.
2. Nathan R. Whitely, Alan P. Lam, and Wei-Ping Pan, "Practical Applications of Thermal Analysis and Rheology in the Physical Chemistry Laboratory," Proceeding of the 32<sup>nd</sup> NATAS conference, October 4-6, 2004, Williamsburg, VA, P103.
3. Wei-Ping Pan, Laura Wells, and Nathan Whitely, "Thermal Properties of Polystyrene Nanocomposites Prepared by Melt Interaction," Proceeding of the 32<sup>nd</sup> NATAS conference, October 4-6, 2004, Williamsburg, VA, P140.
4. Lingyu Meng, Qiao He and Wei-Ping Pan, "Thermal Stability Analysis of Ammonium Bicarbonate and Long Effect Ammonium Bicarbonate and Qualitative Detection of Ammonium Bicarbonate Using Thermogravimetric Analysis Methods," Proceeding of the 32<sup>nd</sup> NATAS conference, October 4-6, 2004, Williamsburg, VA, P190.

## Combustion Laboratory

**Mercury Field-Testing:** Our combustion team performed mercury measurements and activated carbon injection on two boiler units during October.

**Woodceramics Factory at Japan:** Wei-Ping Pan spent one week visiting Kakuhiro Woodceramics Factory, Tohoku System Woodceramics Factory, and Aomori Industrial Research Center in Aomori, Japan. Woodceramics are a new type of environmentally benign material that is produced from plant-based carbon-containing wastes, and it is a carbon/carbon hybrid material in the sense that cellulose- or lignin-based carbon is reinforced by phenolic-resin based glassy carbon. Woodceramics have been prepared from apple pomace, sawdust, and chicken waste in the Aomori area. Dr. Pan also visited Professor Ninomiya at Chubu University in Nagoya to discuss a research project on the ash behavior of coal and sewage sludge. He also visited the National Institute of Advanced Industrial Science and Technology (AIST) to discuss a TG/MS system. Professor Sawada at Tokyo Institute of Polytechnics showed Dr. Pan highly conductive transparent films prepared by dip-coating techniques during this visit.

**Coal 2020 Conference:** On October 12-13, 2004, Cinergy Corp., the University of Kentucky, and Eastman Chemical Company, sponsored a national conference on the future of coal at the Griffin Gate Marriott Resort in Lexington, Kentucky entitled "Coal 2020 – Burning Questions". About 200 attendees from industry, government and academia gathered to hear distinguished speakers and panelists from across the nation address the major environmental, economic and technology issues associated with coal

use between now and the year 2020. With the depletion of our oil and natural gas reserves, how we use coal over the next 15 years will significantly impact our regional and national economy and the environment for the long term. The year 2020 is also a self-imposed goal for some in the energy industry to achieve zero emissions from coal. Dr. Pan also presented his view on mercury emission and control at the Panel II: How Shall We Ensure Sustainability? Coal and the Environment. The other speakers in the panel included: **Jeffrey Holmstead**, Assistant Administrator, U. S. Environmental Protection Agency (EPA); **David Doniger**, Policy Director, National Resources Defense Council (NRDC); **Thomas Meng**, President, Energy and Mineral Law Foundation, Stites and Harbison, PLLC; **F. T. Sparrow**, Director, Center for Coal Technology Research, Purdue University. Please visit [www.cinergy.com/coal2020](http://www.cinergy.com/coal2020) for details of the meeting.