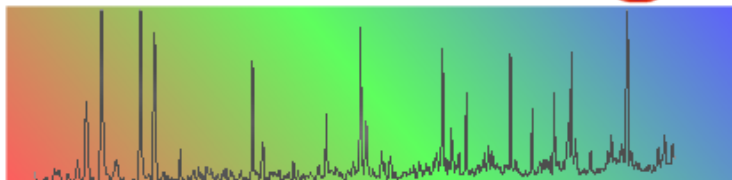




SAS-Chicago



January Meeting

Tuesday, January 15, 2008

The January 2008 meeting will be held at the Auditorium of McCrone Associates, 850 Pasquinelli Drive, Westmont, IL. See the map on the following page.

Social Hour: 5:30 PM

Buffet Dinner: 6:00 PM

Speaker: 7:00 PM

DART Mass Spectrometry for Ink Analysis

by

Roger Jones, Ph.D.

Iowa State University

Crimes using guns or bombs may draw more attention, but crimes using documents are more prevalent. The examination of questioned documents is central to investigating these crimes, and analysis of the ink on documents is often pivotal to this examination. DART (direct analysis in real time) is an ion source for mass spectrometry (MS) that allows the analysis of solids in the open air without sample preparation. It does this using a heated stream of helium containing electronically excited atoms. The stream evaporates and ablates material from the solid surface and ionizes the vapor. This is a relatively mild sampling and ionization process, so when DART MS is applied to writing inks on paper, the spectra consist primarily of protonated and ionized molecules from the more labile components of the ink, with little molecular fragmentation. So little dye is removed during the analysis that the visual appearance of the document is unchanged, preserving the forensic evidence. Other forensic analysis techniques for inks are dominated by the ink dyes, but DART MS is not, so it is complementary to the others. We are examining the various issues related to whether DART MS is a practical method for the forensic identification of ink on paper. These include how the paper on which the ink is written affects the ink spectrum, how the age of the writing affects the spectrum, and whether the spectra of inks are sufficiently characteristic to allow them to be identified from their spectra. We are building up a library of DART ink spectra to test how readily inks can be identified. Other potential forensic applications of DART MS will be briefly discussed.

Please make your dinner reservations for the upcoming meeting by email at sas.chicago@bigfoot.com, by using the form on our web page < <http://www.sas-chicago.org/Online%20Registration%20at%20McCrone%20Associates.htm> > or by calling Slav Stepanovich at 847-421-2056. Leave **your name, company affiliation, a telephone number** and the **number of reservations**. Please call by **noon Friday, January 11th**, so that proper arrangements. If you can't attend, cancel by Monday noon. Our appreciation to The McCrone Group for the use of their facility.

Pizza Buffet includes:

- selection of pizza
- soft drinks, tea and coffee
- selection of baked goods for dessert



Dinner Cost Members: \$25

Students and Unemployed Members: \$10

Non-members: \$30

Biography of Roger Jones

Roger Jones has been an associate chemist at Iowa State University in both Ames Laboratory–USDOE and the Institute for Physical Research and Technology since 1988. He received his B.S. in chemistry from the University of California at Berkeley in 1975 and his Ph.D. in physical chemistry from the Massachusetts Institute of Technology in 1980. His primary research has been in applications of infrared spectroscopy and mass spectrometry to a wide variety of real-world problems. In addition to forensic ink analysis, recent problems have included detecting and measuring weathering and acute chemical damage in carbon-fiber composites, rapid sorting of seed grain for desirable compositions, analysis of pyrolysis oil, depth profiling of layered polymers and coatings, and real-time on-line process analysis.

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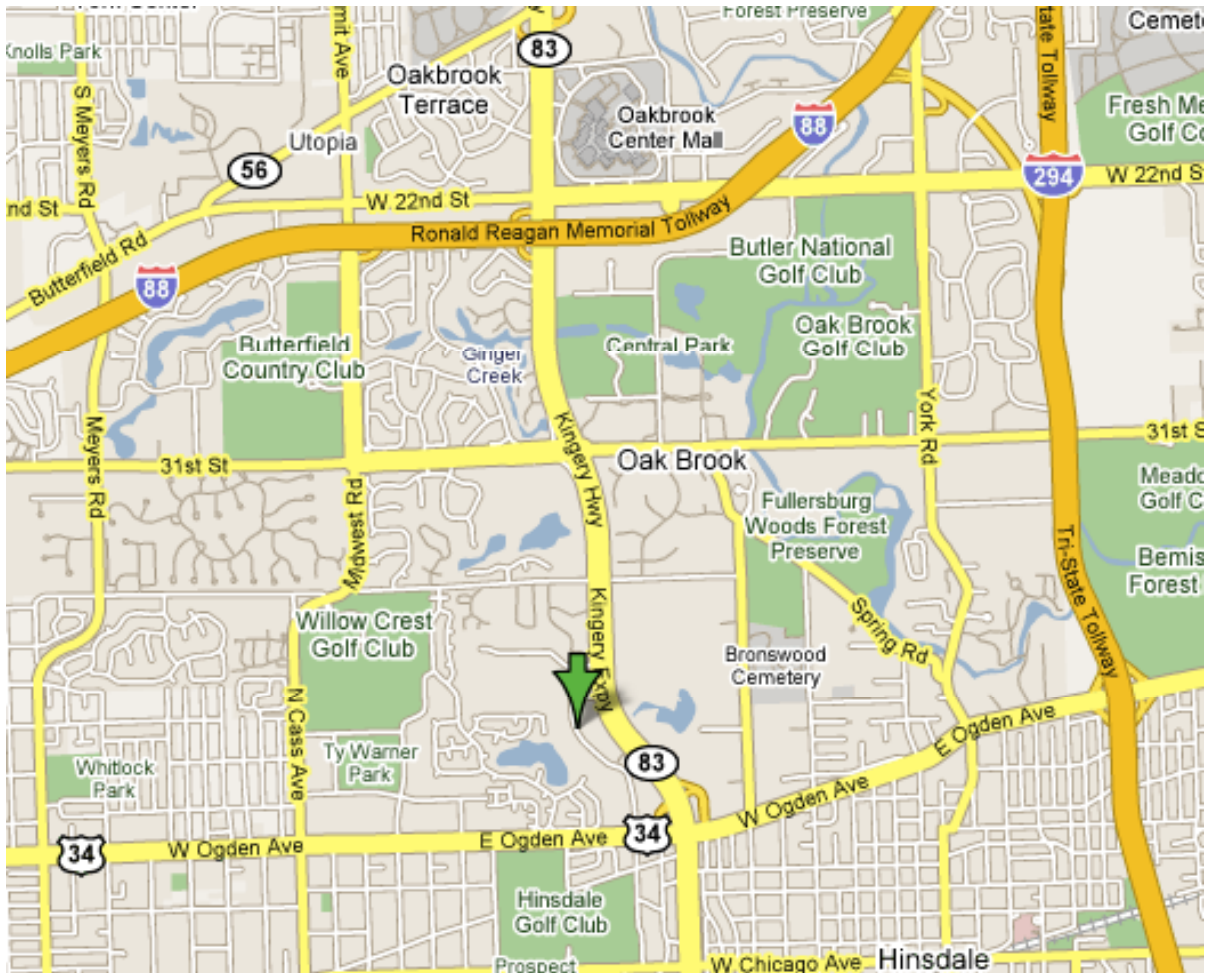
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DIRECTIONS TO THE MCCRONE ASSOCIATES - 850 Pasquinelli Drive, Westmont, IL

From I-294, exit onto Ogden Avenue west (Rte. 34). Drive 2 miles west, and immediately after Rte. 83, at the second set of lights, turn right onto Pasquinelli Drive. McCrone Associates is on the left hand side 0.6 miles north of Ogden Avenue,



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