CHEMISTRY COLLOQUIUM

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11:25 AM, Room 111, Life Sciences

"Advanced Characterization of Biofuels"

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(Retired)

Issues related to greenhouse gas production and long term viability of crude oil supplies have prompted increased interest in transportation fuels derived from biological sources. Currently ethanol from corn (gasoline) and biodiesel from vegetable and animal oils (diesel fuel) are the only readily available commercial products. Longer term, fuels derived from alternative non-food sources such as algae and cellulose, and alcohols other than ethanol will become the preferred sources of biofuels.
In this presentation we will briefly summarize the current status of biofuels. This will be followed by a discussion of the application of advanced chromatographic and other analytical techniques to the characterization of major and minor components found in biodiesel. These techniques include high speed GC and LC was well as GCMS and LCMS. A brief discussion of analytical techniques suitable for the characterization of sugars derived from waste agricultural products will also be provided.

Biography
Rick Pauls graduated from Virginia Tech with a BS in Chemistry in 1972 and received a PhD in analytical chemistry from Purdue University in 1976 working under the direction of L. B. Rogers. He then joined the R&D department of Standard Oil (Indiana), later Amoco Corp., working in the corporate analytical division. He continued his career at Amoco and then BP after its merger with Amoco until his retirement in the spring of 2009. At Amoco/BP, his work focused primarily upon the development of high resolution, sensitive analytical methodologies to characterize complex mixtures related to Amoco's chemical, petroleum and fuel's businesses. His principal focus was on the utilization of advanced chromatographic techniques although other technologies were employed as appropriate. He was also involved in the development and implementation of on-line process analytical technology.