



Microgram

Bulletin

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- MAY 2010 -

SELECTED REFERENCES

[The Selected References section is a compilation of recent publications of presumed interest to forensic chemists. Unless otherwise stated, all listed citations are published in English. Abbreviated mailing address information duplicates that provided by the abstracting service. Patents and Proceedings are reported only by their *Chemical Abstracts* citation number.]

1. Ferreira FJO, Crispim VR, Silva AX. **Detection of drugs and explosives using neutron computerized tomography and artificial intelligence techniques.** *Radiation and Isotopes* 2010;68(6):1012-1017. [Editor's Notes: The development of a nondestructive real-time neutron radiology with computerized tomography methodology to detect illicit drugs and plastic explosives is described. Tests using real samples proved that the system is capable of identifying 97% of the inspected materials. Contact: Instituto de Engenharia Nuclear, Rio de Janeiro, Cidade Universitaria, CEP 21945-970, Caixa Postal 68550, Brazil.]
2. Guerra-Diaz P, Gura S, Almirall JR. **Dynamic planar solid phase microextraction-mobility spectrometry for rapid field air sampling and analysis of illicit drugs and explosives.** *Analytical Chemistry* 2010;82(7):2826-2835. [Editor's Notes: A preconcentration device that targets the volatile chemical signatures associated with illicit drugs and explosives (high and low) has been designed to fit in the inlet of an ion mobility spectrometer (IMS). This is the first reporting of a fast and sensitive method

for dynamic sampling of large volumes of air using planar solid phase microextraction (PSPME) incorporating a high surface area for absorption of analytes onto a sol-gel polydimethylsiloxane (PDMS) coating for direct thermal desorption into an IMS. This device affords high extraction efficiencies due to strong retention properties at ambient temperature, resulting in the detection of analyte concentrations in the parts per trillion range when as low as 3.5 L of air are sampled over the course of 10 seconds (absolute mass detection of less than a nanogram). Dynamic PSPME was used to sample the headspace over the following: 3,4-methylenedioxymethamphetamine (MDMA) tablets resulting in the detection of 12-40 ng of piperonal, high explosives (Pentolite) resulting in the detection of 0.6 ng of 2,4,6-trinitrotoluene (TNT), and low explosives (several smokeless powders) resulting in the detection of 26-35 ng of 2,4-dinitrotoluene (2,4-DNT) and 11-74 ng of diphenylamine (DPA). Contact: Department of Chemistry and Biochemistry and International Forensic Research Institute, Florida International University, FL, USA.]

3. Roggo Y, Degardin K, Margot P. **Identification of pharmaceutical tablets by Raman spectroscopy and chemometrics.** *Talanta* 2010;81(3):988-995. [Editor's Notes: Raman spectroscopy has become an attractive tool for the analysis of pharmaceutical solid dosage forms. In this study, Raman spectroscopy is used to ensure the identity of tablets. Two calibrations have been developed in series: the first one identifies the product family while the second one specifies the formulation. This calibration strategy enables the identification of 25 product families in the absence of prior information about the sample. Raman spectroscopy coupled with chemometrics is therefore a fast and accurate tool for the identification of pharmaceutical tablets. Contact: F. Hoffmann-La Roche Ltd., Basel, Switzerland.]

Additional References of Possible Interest:

1. Anonymous. **Science in court.** *Nature* 2010;464(7287):325. [Editor's Notes: Academics are too often at loggerheads with forensic scientists. A new framework for certification, accreditation and research could help to heal the breach.]
2. Thomas A, Kohler M, Mester J, Geyer H, Schaezner W, Petrou M, Thevis M. **Identification of the growth-hormone-releasing peptide-2 (GHRP-2) in a nutritional supplement.** *Drug Testing and Analysis* 2010;2(3):144-148. [Editor's Notes: Presents the title study. Contact: Center for Preventive Doping Research/Institute of Biochemistry, German Sport University Cologne, Germany.]
3. Weston DJ. **Ambient ionization mass spectrometry: Current understanding of mechanistic theory; analytical performance and application areas.** *Analyst* 2010;135(4):661-668. [Editor's Notes: Ambient ionization mass spectrometry allows the rapid analysis of samples or objects in their native state in the open environment with no prior preparation. Over the past six years, the ability of these techniques to provide selective analyte desorption and ionization, in combination with mass spectrometry (MS), has provided a growing number of powerful analytical alternatives. With the emergence of new ambient ionization methods, and the complementary nature of existing desorption and/or ionization techniques, additional hyphenated methods have been devised, which pushes the total number of documented methods to almost 30. An overview of the field of ambient ionization MS will be given, followed by broad

classification to allow detailed discussion of theory and common mechanistic factors underpinning a number of key techniques. Consideration will be given to experimental design, ease of implementation and analytical performance, detailing subsequent impact on a number of application areas, both established and emerging. Contact: Clinical Pharmacology and DMPK, AstraZeneca R&D Charnwood, Bakewell Road, Loughborough LE11 5RH.]

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THE JOURNAL/TEXTBOOK COLLECTION EXCHANGE

The Journal/Textbook Collection Exchange is a service intended to facilitate the transfer of unwanted journals and textbooks to forensic libraries or other *Microgram* subscribers. The current donations are listed below. The offers are First Come/First Serve (except **libraries have preference**). There are no charges to the requestor. Please provide a full mailing address in the request. **Important!:** Do not provide an address that irradiates mail!

Federal Criminal Code and Rules –2008 Edition (12 copies)

Journal of Forensic Sciences:

2001: January (#1), March (#2), May (#3), September (#5), November (#6)

2002: Complete set

2003: Complete set

2005: January (#1), May (#3), November (#6)

All subscribers are encouraged to donate surplus or unwanted items/collections. Reference texts and long runs of forensic/analytical journals are of particular interest; however, even single issues are worthwhile, and may fill a hole in an existing collection. If interested, please consult the *Microgram* website or contact the *Microgram* Editor for further instructions.

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THE DEA FY 2010 STATE AND LOCAL FORENSIC CHEMISTS SEMINAR SCHEDULE

The FY 2010 schedule for the State and Local Forensic Chemists Seminar is as follows:

September 13-17, 2010

The school is open only to forensic chemists working for law enforcement agencies. It is intended for chemists who have completed their agency's internal training program and have also been working on the bench for at least one year. There is no tuition charge. The course is held at the Hyatt Place Dulles North Hotel in Sterling, Virginia (near the Washington/Dulles International Airport). A copy of the application form is reproduced on the last page of this issue of *Microgram Bulletin*. Completed applications should be mailed to the Special Testing and Research Laboratory (Attention: J. Head) at 22624 Dulles Summit Court, Dulles, VA 20166. For additional information, call (703) 668-3349.

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SCIENTIFIC MEETINGS

Title: 2010 Southwestern Association of Forensic Scientists Annual Meeting
Sponsoring Organization: Southwestern Association of Forensic Scientists
Inclusive Dates: September 20 - 24, 2010
Location: Great Wolf Lodge (Grapevine, TX)
Contact Information: swafs2010@yahoo.com
Website: www.swafs.us

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Title: Southern Association of Forensic Scientists Annual Fall Meeting
Sponsoring Organization: Southern Association of Forensic Scientists
Inclusive Dates: September 19 - 24, 2010
Location: Hollywood Casino Hotel (Tunica, MS)
Contact Information: See Website
Website: www.southernforensic.org

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Title: 2010 Northwest Association of Forensic Scientists Meeting
Sponsoring Organization: Northwest Association of Forensic Scientists
Inclusive Dates: September 27 – October 1, 2010
Location: Crown Plaza Portland (Portland, OR)
Contact Information: See Website
Website: www.nwafs.org

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Title: 2010 Midwestern Association of Forensic Scientists 39th Annual Meeting
Sponsoring Organization: Midwestern Association of Forensic Scientists
Inclusive Dates: October 4 - 8, 2010
Location: Kansas City Marriott Downtown (Kansas City, MO)
Contact Information: See Website
Website: www.mafs.net

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DEA State and Local Forensic Chemist Seminar Application

Name: (PRINT NAME EXACTLY AS IT IS TO APPEAR ON CERTIFICATE)	Title:
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Employer:

Your Office Mailing Address (include city, state, and zip code):	Length of Service:
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Business Telephone: () -	Business Fax: () -	Date of Application:
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Email Address:

Education

College or University	Degree	Major

Please Check Which Techniques or Equipment Are Used in Your Laboratory

Color Tests	UV
Column Chromatography	IR
Microcrystal Tests	CE
Thin Layer Chromatography	GC/MS
GC	IR
HPLC	Other (please specify)

Indicate Analytical Problem(s) Nominee Would Like to Have Covered:

Choice of Seminar Dates:

1st Choice: _____ 2nd Choice: _____

Laboratory Chief/Director:

Printed Name: _____ Signature: _____

Title: _____ Date: _____

Phone: _____