

Ali Kocak, PhD

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EDUCATION:

Post Doctorate in Biophysics	2000
Ph.D. in Analytical and Physical Biochemistry	1998
M.S. in Electrochemistry	1991
B.S. in Chemistry	1986

SHORT COURSES AND CERTIFICATES:

- Certificate in Chemometrics, Eastern Analytical Symposium, New Jersey, 2006.
- Certificate in the Practice of Modern HPLC, LC Resources, New Jersey, 2001.
- Certificate in FTIR Accessories, Eastern Analytical Symposium, New Jersey 1997.
- Basic Optomechanical Design, University of Connecticut, 1997.

EMPLOYMENT SUMMARY:

2005-Present: Associate Professor, Science Department, John Jay College of Criminal Justice.

2002-2005: Application's Scientist, Harrick Scientific Corporation, New York.

2000-2002: Manager, Del Pharmaceuticals, New York; managed a group of Chemists in method development / validation, stability and package testing areas in both pharmaceutical and cosmetic departments.

1998-2000: Research Associate, Department of Physiology and Biophysics, Albert Einstein College of Medicine, Yeshiva University.

1993-1997: Research Assistant, Spectroscopy & Biophysics laboratory, Hunter College, CUNY.

RESEARCH EXPERIENCE:

Application's Scientist: Harrick Scientific Corporation, New York 2003-2005

- Design and development of ATR (attenuated total reflection) and DRFTIRS (diffuse reflectance) accessories.

Postdoctoral Research: Department of Physiology and Biophysics, Albert Einstein College of Medicine, 1998-2000

- Studied structure - function relationships in biological molecules by femtosecond transient infrared absorption spectroscopy.
- Sample preparation using HPLC and other techniques.

TEACHING:

Associate Professor: John Jay College of Criminal Justice, 2005-present.

Courses:

Instrumental Analysis (lecture and the laboratory)

Quantitative Analysis (lecture and the laboratory)

REFEREED PUBLICATIONS:

A. Koçak, L. M. De Cotiis, D. Hoffman (2010) "Comparative Study of ATR and Transflection Infrared Spectroscopy techniques to analyze Hallucinogenic Mushrooms". **Forensic Science International**. Feb 25;195(1-3):36-41.

• **A. Koçak**, Z. S. Blanchard, D. Hoffman (2009) "Studying the Effect of pH Variation on the Incorporation of the Antipsychotic Drug Clozapine into Dyed and Non-dyed Hair samples using Micro-ATR Spectroscopy", **Applied Spectroscopy**, 63(6) 689-693.

• **A. Koçak**, J. Lucania and S. Berets (2009) "Some Advances in FTIR Transflectance Analysis and possible applications in Forensic Chemistry" **Applied Spectroscopy**, 63(5) 507-511.

• **A. Koçak** and S. Berets (2008) "Using Micro-ATR Spectroscopy to Determine Chemically Induced Changes in Neat Human Hair: Feasibility Study on the Effect of Antipsychotic Drugs" **Applied Spectroscopy**, 62(7) 803-809.

A. Koçak, S. Berets, V. Milosevic, and M. Milosevic (2006), "Using the Kramers-Kronig Method to determine Optical Constants and Evaluating Its Suitability as a Linear Transform for Near-Normal Front-surface Reflectance Spectra" **Applied Spectroscopy**, 60(9) 1004-1007

• V. Milosevic and **A. Koçak**, (June, 2004), "Analyzing Trans Fats in Edible Oils and Fats using Single Reflection ATR-FTIR," **American Laboratory**, 30-34.

• V. Milosevic and **A. Koçak**, (2004) "Real-Time Monitoring of Thermally Induced Trans Fats in Corn Oil using the FatIR," **Spectroscopy** "the Application Notebook" 25.

• **A. Koçak**, R. Luque, M. Diem, (1998) "The Solution Structure of Small Peptides: An IRCD Study of Aqueous Solutions of (L-Ala)_n [n=3, 4, 5, 6] at Different Temperatures and Ionic Strengths," **Biopolymers**, Vol. 46, 455-463.

• G. Somer, **A. Koçak**, (1993) "Determination of Atmospheric Sulfur Dioxide by Differential - Pulse Polarography," **Analyst**, Vol. 118, 657-660.

• G. Somer, **A. Koçak**, (1992) "Differential- Pulse Polarographic Determination of Sulfur Dioxide," **Analytical Proceedings**, Vol. 29, 368.

BOOK CHAPTERS AND CONTRIBUTIONS:

• **Ali Koçak**, "The Role of Vibrational Spectroscopy in Forensic Chemistry" book chapter in "Hand Book of Forensic Chemistry" edited by **Lawrence Kobilinsky**, **John Wiley & Sons**.

• **Ali Koçak**, "ATR Spectroscopy in the Undergraduate Chemistry Laboratory". Contribution to the application notes of **Harrick Scientific Products**. June, 2008.

PAPERS PRESENTED:

• Joseph P. Lucania and **Ali Koçak** "techniques refinements in the analysis of dye droplets by concentrated multiple reflection ATR spectroscopy" **poster presentation** 63nd Pittsburgh Conference, Philadelphia, Pennsylvania (2013).

• Joseph P. Lucania and **Ali Koçak** "An evaluation of different finishing techniques for the fabrication of mid-infrared liquid cell optical mirrors from Hastelloy™ B-3 Alloy" **poster presentation** 63nd Pittsburgh Conference, Philadelphia, Pennsylvania (2013).

- Joseph P. Lucania and **Ali Koçak** “Mid-infrared analysis of small amounts of dissolved dyes by concentrated multiple reflection ATR spectroscopy” poster presentation 63nd Pittsburgh Conference, Orlando, Florida **(2012)**.
- Joseph P. Lucania and **Ali Koçak** “An evaluation of Alternate stainless steel finishing techniques for liquid cell optical mirrors used in the mid-infrared” poster presentation 63nd Pittsburgh Conference, Orlando, Florida **(2012)**.
- **Ali Koçak** “*The role of vibrational spectroscopy in modern forensic science research*” Invited Speaker, World Congress of Forensics 2011 Conference in Chongqing, China. **(2011)**
- **Ali Koçak** “*The role of vibrational spectroscopy in modern forensic science research*” Invited Speaker, 3rd International Conference on Drug Discovery and Therapy, Dubai, UAE **(2011)**
- **Ali Koçak** “The Role of Vibrational Spectroscopy in Modern Forensic Science Research” Invited Speaker, 4th Int’l Conference of the Forensic Medicine Authority, Cairo, Egypt **(2010)**.
- Joseph P. Lucania and **Ali Koçak** “The Effect of Elevated Temperature on Single Reflection Germanium FTIR-ATR Spectroscopy” poster presentation 62nd Pittsburgh Conference, Atlanta, Georgia **(2011)**.
- Joseph P. Lucania and **Ali Koçak** “Improving Mineral Spectra Reproducibility Using Single Reflection Diamond FTIRATR Spectroscopy” poster presentation 62nd Pittsburgh Conference, Atlanta, Georgia **(2011)**.
- Joseph P. Lucania and **Ali Koçak** “Reproducibility of FTIR Mineral Spectra using Alternate Single Reflection Diamond ATR Configurations” poster presentation 61st Pittsburgh Conference, Orlando, Florida **(2010)**.
- Joseph P. Lucania and **Ali Koçak** “A Variable Angle Internal and External Reflection FTIR Liquid Cell” poster presentation 61st Pittsburgh Conference Orlando, Florida **(2010)**.
- Joseph P. Lucania, Susan L. Berets and **Ali Koçak** “A Sensitive FTIR Transflectance Technique for Non-Destructive Identification of Small Particle Mineral Samples” poster presentation. 60th Pittsburgh Conference, Chicago, IL **(2009)**.
- Joseph P. Lucania, Susan L. Berets and **Ali Koçak** “A New Liquid Cell for FTIR Applications” poster presentation. 60th Pittsburgh Conference, Chicago, IL **(2009)**.