

## Submitted Papers

- 1089** Gold Nanoparticle Based Surface-Enhanced Raman Scattering Spectroscopy of Cancerous and Normal Nasopharyngeal Tissues Under Near-Infrared Laser Excitation  
*Shangyuan Feng, Juqiang Lin, Min Cheng, Yong-Zeng Li, Guannan Chen, Zufang Huang, Yun Yu, Rong Chen, and Haishan Zeng*
- 1095** Differentiation of Healthy Brain Tissue and Tumors Using Surface-Enhanced Raman Scattering  
*Ömer Aydin, Murat Altaş, Mehmet Kahraman, Ömer Faruk Bayrak, and Mustafa Çulha*
- 1101** Patterned Silver Nanorod Array Substrates for Surface-Enhanced Raman Scattering  
*Nicole E. Marotta, Jabulani R. Barber, Peter R. Dluhy, and Lawrence A. Bottomley*
- 1107** Quantitative Surface-Enhanced Raman Spectroscopy Based Analysis of MicroRNA Mixtures  
*Jeremy D. Driskell, Oliva M. Primera-Pedrozo, Richard A. Dluhy, Yiping Zhao, and Ralph A. Tripp*
- 1115** Light Sheet Direct Raman Imaging Technique for Observation of Mixing of Solvents  
*Yusuke Oshima, Chie Furihata, and Hidetoshi Sato*
- 1121** Investigation of Hydrogenation of Toluene to Methylcyclohexane in a Trickle Bed Reactor by Low-Field Nuclear Magnetic Resonance Spectroscopy  
*Gisela Guthausen, Agnes von Garnier, and Rainer Reimert*
- 1128** Complete Theoretical Treatment of the Transmittance Ratio Ultraviolet/Visible Spectrophotometric Stray Radiant Energy Test Method  
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- 1134** Effects of Added Minerals (Calcium, Phosphate, and Citrate) on the Molecular Structure of Skim Milk as Investigated by Mid-Infrared and Synchronous Fluorescence Spectroscopies Coupled with Chemometrics  
*Tahar Boubellouta, Virginie Galtier, and Éric Dufour*
- 1142** Recovering Independent Components from Shifted Data Using Fast Independent Component Analysis and Swarm Intelligence  
*Caleb Rascon, Barry Lennox, and Ognjen Marjanovic*
- 1152** Determination of Phase Transition Temperatures by the Analysis of Baseline Variations in Transmittance Infrared Spectroscopy  
*Boris Zimmermann and Goran Baranović*
- 1162** Attenuated Total Reflection Surface-Enhanced Infrared Absorption Spectroscopy at a Cobalt Electrode  
*Sheng-Juan Huo, Jin-Yi Wang, Da-Lin Sun, and Wen-Bin Cai*
- 1168** *In Situ* Evaluation of Net Nitrification Rate in Terra Rossa Soil Using a Fourier Transform Infrared Attenuated Total Reflection <sup>15</sup>N Tracing Technique  
*Du Changwen, Raphael Linker, Avi Shaviv, and Zhou Jianmin*
- 1174** Thermally Induced Dissociation Nature of Pure 2-Pyrrolidinone via Near-Infrared Correlation Spectroscopy Analysis  
*Hui Tang, Shengtong Sun, and Peiyi Wu*

## Spectroscopic Techniques

- 1181** Demountable Liquid/Flow Cell for *in Vivo* Infrared Microspectroscopy of Biological Specimens  
*M. J. Nasse, S. Ratti, M. Giordano, and C. J. Hirschmugl*

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- 1187** Assessment of the Titanium Dioxide Absorption Coefficient by Grazing-Angle Fourier Transform Infrared and Ellipsometric Measurements  
*Fabio Variola, Antonio Nanci, and Federico Rosei*

- 1190** Transfer of Calibrations for Barley Quality from Dispersive Instrument to Fourier Transform Near-Infrared Instrument

*Miryeong Sohn, David S. Himmelsbach, Franklin E. Barton, II, and James A. de Haseth*

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### **Cover Feature**

Metal nanoparticle based surface-enhanced Raman scattering (SERS) could become a useful tool for tissue diagnosis since the nanoparticles as the SERS substrate can be directly administered into the tissue, enabling convenient Raman spectroscopy and imaging acquisition. The cover includes a graph showing how the Raman spectral signals are dramatically enhanced by administering gold nanoparticles into the tissue. The cover also illustrates the capabilities of using gold nanoparticle based SERS to obtain biochemical information with high spatial resolution from human healthy and cancerous nasopharyngeal tissues. This work demonstrates the great potential for using SERS imaging for distinguishing cancerous and normal nasopharyngeal tissues on frozen sections without using any dye labeling or other chemical species as functionalized binding sites. For more information, please see the article "Gold Nanoparticle Based Surface-Enhanced Raman Scattering Spectroscopy of Cancerous and Normal Nasopharyngeal Tissues Under Near-Infrared Laser Excitation", by Shangyuan Feng, Juqiang Lin, Min Cheng, Yongzeng Li, Guannan Chen, Zufang Huang, Yun Yu, Rong Chen, and Haishan Zeng.