Unique infrared technique finds applications in nanoscience

The Springer journal *Analytical and Bioanalytical Chemistry* has chosen the Austrian chemist Thomas Lummerstorfer (31) as the recipient of its Best Paper Award 2007. Lummerstorfer's paper "Monolayers at solid-solid interfaces probed with infrared spectroscopy" discusses an infrared technique which is expected to gain substantial importance in various fields of nanoscience. The winning paper will receive special prominence on an ABC cover. The Award is accompanied by EUR 1,000, sponsored by Springer.

Lummerstorfer's paper is a review of his work establishing a new sandwich-like optical configuration for the measurement of infrared spectra of thin films and solid-solid interfaces. The study represents the first experimental demonstration of an enhancement effect that was theoretically predicted several decades ago but could never be verified experimentally.

This configuration allows not only the measurements of monolayer infrared spectra on a wide range of metal and nonmetal substrates with greatly improved sensitivity, but also allows reactions and processes taking place at the interface between two solid materials to be monitored spectroscopically.

The infrared technique he outlined is expected to be used in numerous fields of nanoscience and for routine surface infrared measurements. Thomas Lummerstorfer received his PhD from the Vienna University of Technology in 2005. He now works in research and development at Semperit GmbH in Austria.

Kiyokatsu Jinno, Editor of *ABC* said, "Dr. Lummerstorfer's work indicates that infrared spectroscopy can be a powerful tool to investigate novel insights into the chemistry and structure of monolayers confined and compressed between two solid surfaces. His outstanding paper meets ABC's high standards for excellent research publications."

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