

Introduction

PRAHA2006

The 19th International Conference on High Resolution Molecular Spectroscopy, Prague, Czech Republic, August 29–September 2, 2006

This special issue of Journal of Molecular Spectroscopy contains papers resulting from work presented at the 19th International Conference on High Resolution Molecular Spectroscopy (PRAHA2006), which took place from August 29 to September 2, 2006, in Prague-Dejvice, Czech Republic. The local organization was jointly undertaken by the Institute of Chemical Technology in Prague (whose buildings served as conference venue), the Academy of Sciences of the Czech Republic (represented by the J. Heyrovský Institute of Physical Chemistry and the Institute of Organic Chemistry and Biochemistry), the Czech Technical University, Charles University, and the Ioannes Marcus Marci Spectroscopic Society.

PRAHA2006 had 264 participants from 29 countries. There were 238 scientific presentations of which 13 were invited talks, 31 were contributed talks, and 194 were posters.

The presentations provided broad coverage of current spectroscopic research and the application of spectroscopy in diverse fields such as atmospheric research, astrophysics, astrochemistry, and biological studies. The same is true for the invited lectures. Here, new developments and extensions of experimental spectroscopic techniques were described by **Yasuki Endo** (*University of Tokyo, Japan*) who spoke about the development of FTMW-MMW double-resonance spectroscopy and its applications in spectroscopic studies of oxygen-containing free radicals and radical complexes. **Gabriele Cazzoli** (*University of Bologna, Italy*) spoke about rotational spectroscopy with special emphasis on its application to investigations of atmospheric and interstellar-space chemistry. Spectroscopic theory was represented by **Oleg Polyansky** (*Institute of Applied Physics, Russian Academy of Sciences, Nizhniy Novgorod, Russia*), who discussed high-accuracy calculations of the spectra of light molecules, in particular water, and by **Yoshihiro Sumiوشي** (*University of Tokyo, Japan*) who reported on three-dimensional intermolecular

potential energy surfaces of the (Rare gas)-OH and -SH complexes.

Applications in atmospheric studies were presented by **Kelly Chance** (*Harvard-Smithsonian Center for Astrophysics, Cambridge, Massachusetts, USA*) in a talk about space-based ultraviolet and visible spectroscopy of the Earth's atmosphere. Astrophysical applications were reported by **Athena Coustenis** (*Observatoire de Meudon, France*); her title was "Spectroscopic Issues in Space Studies of the Outer Planets and Titan." **Karl Kleinermanns** (*University of Düsseldorf, Germany*). Title: IR-UV Studies of Amino Acids and Peptides) and **Michel Mons** (*Laboratoire Francis Perrin, CEA, Saclay, France*. Title: Secondary Structures of Short Peptide Chains: A Gas Phase Double-Resonance Laser Study) covered applications to molecules of biological interest.

Wim Ubachs (*Laser Centre, Vrije Universiteit Amsterdam, The Netherlands*) described, in a talk entitled "Molecular Hydrogen, a Century After Lyman," how extreme-accuracy spectroscopic studies of the H₂ molecule can be used to answer fundamental questions, for example if the proton-electron mass ratio changes with time. **Eric Hessels** (*York University, Toronto, Canada*) and **Gerard Meijer** (*Fritz-Haber-Institut der Max-Planck-Gesellschaft, Berlin, Germany*) both spoke about fundamental studies that are assisted by spectroscopy: Prof. Hessels described a laser-controlled method for producing antihydrogen atoms, and Prof. Meijer's talk was concerned with deceleration and trapping of neutral polar molecules.

In the afternoon of Thursday, August 31, 2006, the ceremonial Ioannes Marcus Marci Session (held under the auspices of the Lord Mayor of Prague) took place in the Prague City Hall Auditorium, a historic lecture hall in central Prague. The featured Ioannes Marcus Marci speaker was the 2005 Nobel Laureate **Theodor W. Hänsch** (*Ludwig-Maximilian-Universität München, Munich, Germany*). Prof. Hänsch gave an interesting and exciting review of his research, for which he received the Nobel Prize, in a lecture

entitled “*The Heartbeat of Light*.” The opening speaker, **Philip R. Bunker** (*Steacie Institute for Molecular Sciences, National Research Council of Canada, Ottawa, Ontario, Canada*), gave a no less exciting introduction to molecular symmetry and its applications of high current interest in his talk on “*Near Symmetry in the Molecules of Life and in the Stuff of the Universe*.” The session concluded with Prof. Hänsch being awarded the Ioannes Marcus Marci Medal of the Ioannes Marcus Marci Spectroscopic Society. In the evening after the session, the participants were invited to a reception in the state apartment of the Lord Mayor of Prague.

In the tradition of the Liblice/PRAHA conferences, a chamber concert for the participants was organized in the evening of Friday, September 1, 2006, in the Magna Aula of the Carolinum (the Gothic-style historical Grand Auditorium of Charles University). The quartet *Pro Arte Antiqua Praha*, consisting of musicians from the Czech Philharmonic Orchestra, played several compositions by W. A. Mozart on “historical” instruments identical to those used at Mozart’s time. Before the concert, three Josef Plíva Prizes were awarded for the best student contributions. These prizes were won by

- **Juan Ramon Aviles-Moreno** (*Laboratoire PhLAM, Université de Lille 1, Villeneuve d’Ascq, France*) for a poster entitled “Conformational Flexibility in Hydrated Sugars: The Glycolaldehyde-Water Complex.”
- **Pavel V. Maksyutenko** (*Department of Chemistry, École Polytechnique Fédérale de Lausanne, Switzerland*) for a poster entitled “Direct Spectroscopic Measurement of the Water Dissociation Energy.”

- **Julie M. Michaud** (*Department of Chemistry, University of Alberta, Edmonton, Alberta, Canada*) for a poster entitled “Microwave Spectroscopic Study of $(\text{H}_2)_N$ -OCS Clusters: Structural Isomers for $N = 5$ and Greater.”

The winners were selected by a panel of anonymous judges. The prizes consisted of a diploma, and the recipients were given a selection of books. Furthermore, **Thomas Giesen** (*University of Cologne, Germany*) conveyed greetings to the participants from **Gisbert Winnewisser** (Emeritus Professor at the University of Cologne).

We believe that the PRAHA2006 meeting ran very well. It had a high scientific standard and, we think, fostered a lot of communication, scientific and otherwise, between the participants. The next meeting in the series will take place from **September 2 to 6, 2008**.

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