VABILO NA PREDAVANJE / INVITATION TO THE LECTURE

Seminarji L04 (2008/2009)

Prof. Dr. Saso Gligorovski

(Equipe Instrumentation et Réactivité Atmosphérique, Laboratoire Chimie Provence, Universités d'Aix-Marseille, France)

bo imel seminarsko predavanje z naslovom / will give a seminar lecture entitled

"Light-induced heterogeneous chemistry in the atmosphere"

v ponedeljek / Monday, 20. 04. 2009 ob / at 13.00

Fegeševa predavalnica /
Fegeš Lecture Room at National Institute of Chemistry

Hajdrihova 19, Ljubljana

VLJUDNO VABLJENI / KINDLY INVITED!

Light-induced heterogeneous chemistry in the atmosphere

Laboratory studies, together with field investigation and modelling performance, have clearly demonstrated the importance of heterogeneous processes in the atmosphere. However, a lot remains to be learned, before heterogeneous chemistry can be placed on a firm theoretical foundation analogous to that which exists for gas phase kinetics.
The present work is a continuation of our efforts in the area of the photosensitized heterogeneous process study, to strengthen our knowledge about mechanistic pathways and consequently on the emergent products (surface bound products and gas phase products).

We developed the reaction mechanism associated with newly identified heterogeneous processing in the atmosphere and identified several reaction products. It must be emphasised that the formation of compounds with large molecular masses up to 370 Da absorb in the tropospheric actinic window ($\lambda \geq 290$nm). The latter could easily be observed even with the naked eye, as the initially white particles (coated with the organic material after the simultaneous ozone processing and light irradiation) turned a yellow colour. Thus, the simultaneous ozone processing and light irradiation on aerosol particles is expected to have important consequences on the atmospheric radiative transfer. We have also shown that such heterogeneous light-induced processing can create volatile, hydrophilic species which escape in the gas phase. It can be suggested that such light-induced heterogeneous ozone processing can have an influence on the aerosol surfaces by changing their physico-chemical properties whereas initially non-absorbing molecules are converted into chromophores which absorbs in the tropospheric actinic window.

BIOGRAPHY

Since January 2006 Dr. Sašo Gligorovski has served as an Assistant Professor at the LCP, Université de Provence working to establish and promote a new area of study dealing with the physiochemical processes relevant to understanding and improving the quality of indoor and outdoor air. He obtained his PhD in 2005 under supervision of Prof. Hartmut Herrmann at the IFT in Leipzig and followed this with a one year Postdoc with Dr. Christian George's group in Lyon. He has extensive knowledge in the field of multiphase and heterogeneous reactions in atmospheric science, and is well-versed in manipulating various reactors (flow tube reactor, photo-reactor and white cell) coupled to diverse spectroscopic detection tools such as CCD camera, monohromator-photomultiplier, GC-MS, and PTR-MS.

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