

Joint Research Centre, Ispra, Italy (JRC)

Expertise and Experience

The Institute for Environment and Sustainability of the JRC basically provides technical and scientific support for the conception and development of EU-policies and stimulates collaborative research in the EU through networking. The Joint Research Centre has a long tradition for air pollution studies, including simulation chamber studies.

The “Climate Change” Unit of the Institute for Environment and has a focus on understanding and quantifying (by modelling) the impact of aerosols and reactive trace greenhouse gases (particularly ozone) on climate. An important part of this activity consists in studies of relevant chemical and physical processes by simulation chamber experiments. The unit has a wide range of analytical techniques available for such studies allowing to do gas phase measurements as well as physical and chemical characterisation of aerosol. Studies carried out by the unit have addressed several aspects of atmospheric chemistry relevant to both the generation of particles as well as of photo-oxidants in the atmosphere.

Professional Experience

Dr. Jens Hjorth has more than 20 years of experience in atmospheric chemistry, mainly within the field of laboratory chamber studies of gas phase chemistry related both to the formation of tropospheric ozone and of particles, particularly chemistry of nitrogen and organic sulphur species and of terpenes. He has previously been a principal investigator or coordinator within several EC Shared Cost Actions. He is member of the scientific steering committee for the European Photoreactor (EUPHORE) in Valencia, Spain and was member of the scientific steering committee of the EUROTRAC project “Limitation of Oxidant Production” (LOOP) until the end of the project in 2002. He has (co-) authored 49 papers on peer-reviewed journals in the field of atmospheric chemistry

RECENT/CURRENT EC PROJECTS

BIOVOC	Degradation mechanisms for biogenic VOC (ENV4-CT95-0059), coordinator
DOMAC	DMS: Oxidation mechanisms in relation to aerosols and climate (ENV4-CT97-0410)
ELCID	Evaluation of the climate impact of DMS (EVK2-CT-1999-00033)
EUPHORE	The European Photoreactor (EV5V-CT92-0059)
IALSI	Processes relevant to global change – Improvements and access to a large Simulation Chamber (EVR1-CT-2001-40013)
LABVOC	Laboratory studies on the tropospheric degradation mechanism of biogenic VOCs: Isoprene and DMS (EV5V-CT91-0038)
OSOA	Origin and formation of secondary organic aerosol (EVK2-1999-00016)
PRIME	Peroxy radical initiative for measurements in the environment (ENV4-CT97-0404)
PRICE-2	Peroxy radical inter-comparison exercise (ENV4-CT95-0005)
RADICAL	Evaluation of radical sources in atmospheric chemistry through chamber and laboratory studies (ENV4-CT97-0419)

RECENT PUBLICATIONS

- Acerboni, G., Myhre, G., Jensen, N.R., Nielsen, C.J., Stordal, F., Hjorth, J. (2001) Global warming potentials and atmospheric degradation of three perfluoroalkenes, *Atmos. Environ.* **35**, 4113-4123.
- Ballesteros, B., Jensen, N.R., Hjorth, J. (2002) FT-IR study of the kinetics and products of the reactions of dimethylsulphide, dimethylsulfoxide and dimethylsulphone with Br and BrO, *J. Atmos. Chem.* **43**, 135-150.
- Bolzacchini, E., Bruchi, M., Fantucci, P., Hjorth, J., Meinardi, S., Orlandi, M., Rindone, B., Rosenbohm, E., (2001) The gas-phase reaction of phenol with NO₃, *Environ. Sci. Technol.* **35**, 1791-1797.
- Falbe-Hansen, H., Sørensen, S., Jensen, N.R., Pedersen, T., Hjorth, J. (2000) Atmospheric gas phase reactions of dimethylsulphoxide and dimethylsulphone with OH and NO₃ radicals, Cl atoms and ozone, *Atmos. Environ.* **34**, 1543-1551.
- Kotzias, D., Larsen, B.R., (2000) Carboxylic acids in secondary aerosols from oxidation of cyclic monoterpenes by ozone, *Environ. Sci. Technol.* **34**, 1001-1010.
- Larsen, B.R., Di Bella, D., Glasius, M., Winterhalter, R., Jensen, N.R., Hjorth, J. (2001) Gas-phase OH oxidation of monoterpenes: Gaseous and particulate products, *J. Atmos. Chem.* **38**, 231-276.
- Winterhalter, R., Van Dingenen, R., Larsen, B.R., Jensen, N.R., Hjorth, J. (2003) LC-MS analysis of aerosol particles from the oxidation of α -pinene by ozone and OH-radicals, *Atmos. Chem. Phys. Discuss.* **3**, 1-33.
- Wisthaler, A., Jensen, N.R., Winterhalter, R., Lindinger, W. and Hjorth, J. (2001) Measurements of acetone and other gas-phase product yields from the OH-initiated oxidation of terpenes by proton transfer reaction mass spectrometry (PTR-MS), *Atmos. Environ.* **35**, 6181-6191.