(n.1975)

Lector univ. dr.

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Chimie fizică

Chimia atmosferei

Cinetică chimică

Doctorat: 2007
(Dr. rer. nat.)
Bergische Universität Wuppertal, Germany.

Postdoctorat:
2013-2015
Marie Curie Fellowship
University of Leeds, UK.

2010-2013
DFG research scientist
Bergische Universität Wuppertal, Germany.

2008-2010
IRCSET Fellowship
University College Cork, Ireland.

Proiecte:
Granturi (coordonator):
5 proiecte
~ 838 700 EUR

Granturi (membru):
> 17 proiecte

Iustinian Gabriel BEJAN

Domenii de cercetare / interes

- **Chimia fizică** a proceselor in fază gazoasă. Investigarea mecanismelor de degradare fizico-chimică a compuşilor organici volatili din atmosferă.
- **Cinetica chimică** în fază gazoasă a compuşilor organici volatili cu speciile reactive de interes pentru chimia atmosferei (radicalii OH şi NO_3, ozon şi clor).
- **Chimia aerosolilor**. Distribuţia si compoziţia aerosolilor organici secundari şi mecanismele de formare ale acestora.

Exploatarea diverselor camere de simulare a proceselor atmosferice cu volum de la 10 L la 270 m^3 şi în domeniul de temperatură 203-343 K.

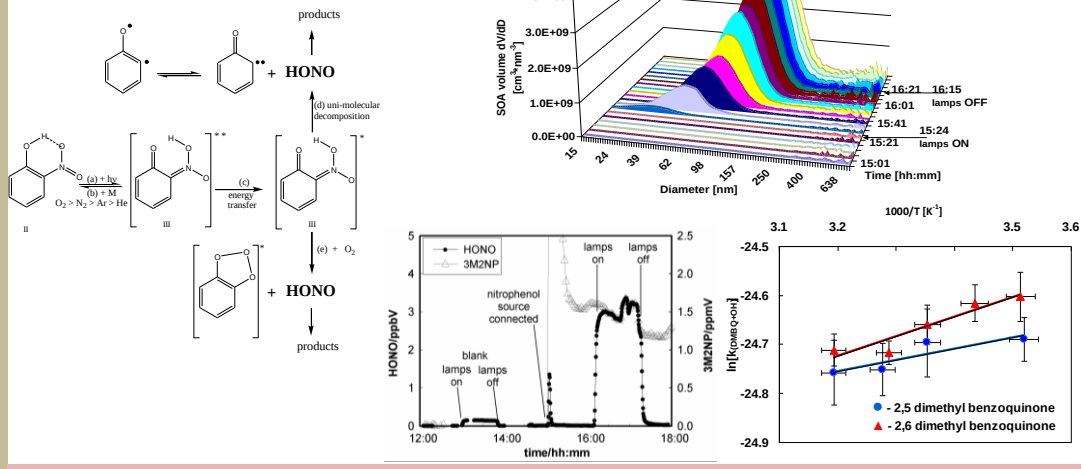
Utilizarea tehnicilor analitice (FTIR, UV-VIS, GC-FID, GC-ECD, GC-MS, LOPAP-HONO, LOPAP-NO_2) în aplicaţii de interes pentru cercetare si monitorizare.

Investigarea distribuţiei particulelor atmosferice utilizând SMPS si UCPC.

Investigarea compoziţiei fazei gazoase si particulate folosind metode de sampling urmate de derivatizarea cu PFBHA/BSTFA si analiza compuşilor organici prin tehnici spectrometrice si cromatografice.

Utilizarea monitoarelor de NO_x, O_3, SO_2, CO, CO_2, HCHO.

Măsurarea radicalilor OH si HO_2 utilizând tehnicile LIF şi FAGE.



Publicații (selective, articole științifice)

Bejan, I., M. Duncianu, R. Olariu, I. Barnes, P. W. Seakins, P. Wiesen, Kinetic study of the gas-phase reactions of chlorine atoms with 2-chlorophenol, 2-nitrophenol, and four methyl-2-nitrophenol isomers, J. Phys. Chem. A, 119 (20), 4735–4745, **2015**.

Blanco, M.B., **I. Bejan**, I. Barnes, P. Wiesen, M.A. Teruel, Products and Mechanism of the Reactions of OH Radicals and Cl Atoms with Methyl Methacrylate (CH2=C(CH3)C(O)OCH3) in the Presence of Nox, Environ. Sci. Technol., 48(3), 1692-1699, **2014**.

Olariu R.I., I. Barnes, **I. Bejan**, C. Arsene, D. Vione, B. Klotz, K.H. Becker, FT-IR product study of the reactions of NO3 radicals with *ortho* -, *meta* -, and *para*-cresol, Environ. Sci. Technol., 47(14), 7729-7738, **2013**.

Bejan I., Schurmann A., Barnes I., Benter T., Kinetics of the gas-phase reactions of OH radicals with a series of trimethylphenols, International Journal of Chemical Kinetics, 44(2), 117-124, **2012**.

Bejan, I., I. Barnes, R. Olariu, Sh. Zhou, P. Wiesen, Th. Benter, Investigations on the gas-phase photolysis and OH radical kinetics of methyl-2-nitrophenols, Phys. Chem. Chem. Phys., 9, 5686-5692, **2007**.

Bejan, I., Y. Abd El Aal, I. Barnes, Th. Benter, B. Bohn, P. Wiesen, J. Kleffmann, The Photolysis of ortho-nitrophenol: a new gas phase source of HONO, Phys. Chem. Chem. Phys., 8, 2028-2035, **2006**.

Spittler, M., I. Barnes, **I. Bejan**, K.J. Brockmann, Th. Benter, K. Wirtz, Reactions of NO3 radicals with limonene and alpha-pinene: Product and SOA formation, Atmos. Environ., 40, Supl. 1, 116-127, **2006**.

Geiger, H., I. Barnes, **I. Bejan**, T. Benter, M. Spittler, The tropospheric degradation of isoprene: an updated module for the regional atmospheric chemistry mechanism, Atmos. Environ., 37, 11, 1503-1519, **2003**.

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Physical chemistry

Atmospheric chemistry

Chemical kinetic

Research area of interest

- **Physical Chemistry** of the gas phase processes. The investigations of the physical and chemical degradation mechanisms of the volatile organic compounds important for the atmosphere.
- **Chemical kinetic** in the gas phase of the volatile organic compounds with reactive species present in the atmosphere (OH and NO_3 radicals, ozone and chlorine atoms).
- **Aerosol chemistry**. Investigations on the size distribution and chemical composition of the secondary organic aerosols and their formation mechanisms.

The work performed to various volume size atmospheric simulation chambers (10 L to 270 m^3) and over 203-343 K temperature range.

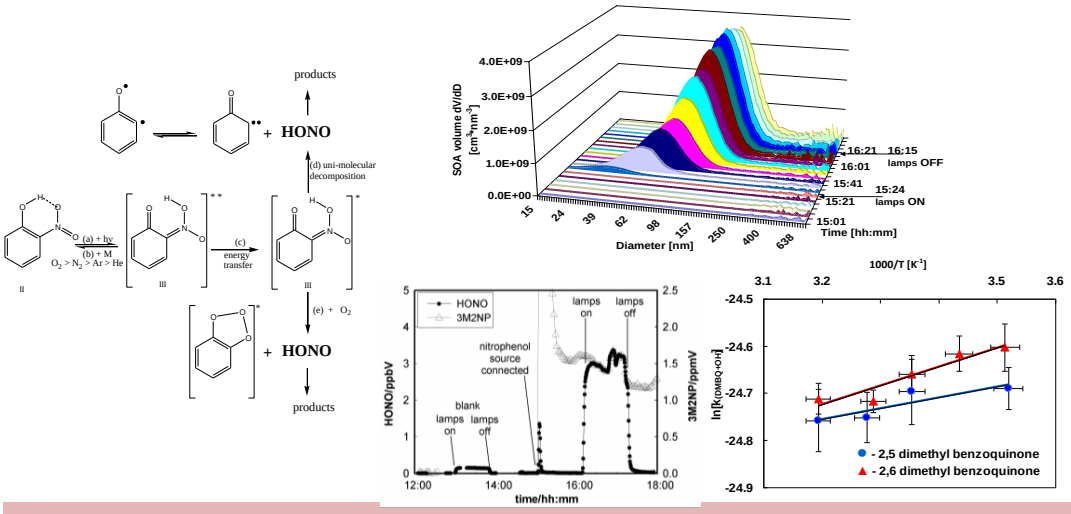
The operation with various analitical techniques (FTIR, UV-VIS, GC-FID, GC-ECD, GC-MS, LOPAP-HONO, LOPAP-NO_2) with application in scientific research and usual monitoring.

The investigations of atmospheric particles size distribution using SMPS and UCPC.

The investigations of both gas phase and aerosol composition, respectively, using sampling methods followed by PFBHA/BSTFA derivatization and analysis with chromatographic and spectrometric techniques.

Measurements with NO_x, O_3, SO_2, CO, CO_2, HCHO monitors.

OH and HO_2 radical measurements using LIF and FAGE techniques.



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