

# Iustinian Gabriel BEJAN

## 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<sub>3</sub> 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<sup>3</sup>) and over 203-343 K temperature range.

The operation with various analytical techniques (FTIR, UV-VIS, GC-FID, GC-ECD, GC-MS, LOPAP-HONO, LOPAP-NO<sub>2</sub>) 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<sub>x</sub>, O<sub>3</sub>, SO<sub>2</sub>, CO, CO<sub>2</sub>, HCHO monitors.

OH and HO<sub>2</sub> radical measurements using LIF and FAGE techniques.



(b.1975)

**Assist. prof. dr.**

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**Physical chemistry**

**Atmospheric chemistry**

**Chemical kinetic**

**PhD: 2007**

Bergische Universität  
Wuppertal, Germany.

**Postdoctoral:**

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

**2010-2013**

DFG research scientist  
Bergische Universität  
Wuppertal, Germany.

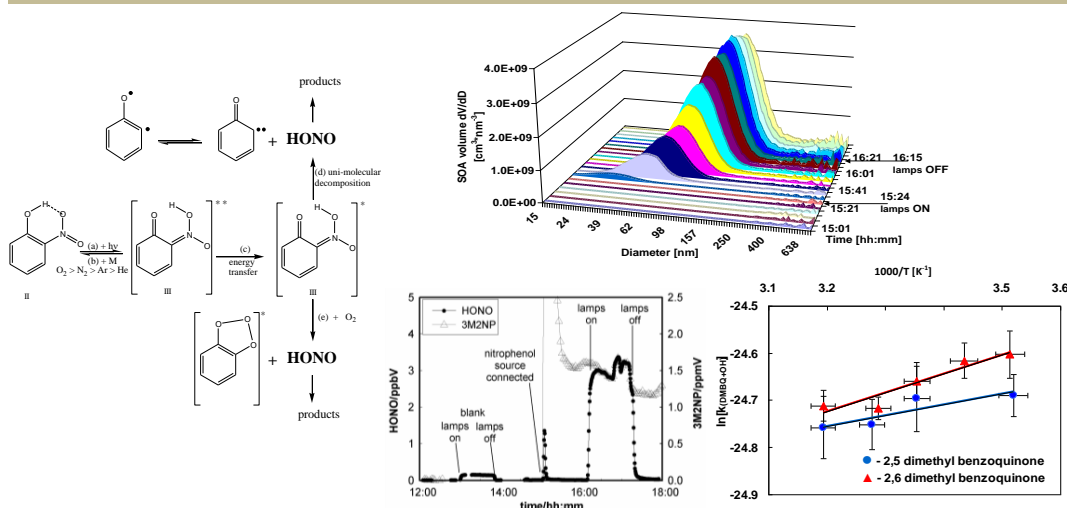
**2008-2010**

IRCSET Fellowship  
University College Cork,  
Ireland.

**Projects:**

Grants (coordinator):  
5 projects  
~ **838 700 EUR**

Grants (member):  
> 17 projects



## Publications (selection)

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 (CH<sub>2</sub>=C(CH<sub>3</sub>)C(O)OCH<sub>3</sub>) in the Presence of No<sub>x</sub>, *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 NO<sub>3</sub> 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 NO<sub>3</sub> 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**.