

PERSONAL INFORMATION

Gabriela Borcia

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WORK EXPERIENCE

2019 – to date

Professor

Alexandru Ioan Cuza University of Iasi, Romania

- Teaching – Physics of atoms and molecules, Physics of materials – polymers
- Research – polymer materials – properties and characterization, modification of polymers by plasma and radiation treatment, surface and bulk properties

Business or sector Education and research

2007 – 2019

Associate Professor

Alexandru Ioan Cuza University of Iasi, Romania

- Teaching – Physics of atoms and molecules, Polymer physics, Polymer materials with special properties
- Research – plasma reactors, plasma diagnosis, plasma processing, surface analysis, polymer materials – properties and characterization

Business or sector Education and research

1998 – 2007

Lecturer

Alexandru Ioan Cuza University of Iasi, Romania

- Teaching – Physics of atoms and molecules, Plasma physics, Atomic and molecular collisions
- Research – plasmas and electrical discharges, reactors and diagnosis, applications to surface treatment, surface analysis

Business or sector Education and research

1996 – 1998

Teaching Assistant

Alexandru Ioan Cuza University of Iasi, Romania

- Teaching – General physics, Plasma physics
- Research – plasmas and electrical discharges, diagnosis, applications to surface treatment, surface analysis

Business or sector Education and research

1992 – 1996

Research Assistant

Alexandru Ioan Cuza University of Iasi, Romania

- Research – plasmas and electrical discharges, reactors and diagnosis, applications to surface treatment, surface analysis

Business or sector Research

EDUCATION AND TRAINING

2016

Dr. habil.

Alexandru Ioan Cuza University of Iasi, Romania

- Physics (Polymer materials. Atmospheric-pressure plasma processing)

1994 – 1997

PhD

University of Paris-Sud (Paris XI), France

- Plasma Physics (Characterization of non-equilibrium plasmas in He–O₂ environment applied to physico-chemical treatment of polymer films)

1991 – 1992

MSc (DEA)

University of Paris-Sud (Paris XI), France

- Physics of Gases and Plasmas (Study on medium-pressure pulsed microwave discharge, in 80% N₂ – 20% O₂ mixture)

1987 – 1992

BSc

Alexandru Ioan Cuza University of Iasi, Romania

- Physics

PERSONAL SKILLS
Mother tongue Romanian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	C1	C1	C1
French	C1	C1	C1	C1	C1
German	A1	A1	A1	A1	A1

Communication skills

Good communication skills gained through experience in teaching at academic level (courses and practical work), in scientific communication, as member of national and international research teams.

Organisational / managerial skills

- leadership (director of scientific grants)

Job-related skills

Plasmas, electrical discharges at low and atmospheric pressure – production and control
 Plasma processing, plasma reactors, surface treatment
 Plasma and discharge characterization
 Surface analysis: XPS, IR, SEM, SIMS, wettability, wickability
 Polymer materials – properties and characterization

Driving licence

B

ADDITIONAL INFORMATION
Major fields of research

Plasma physics and applications, Polymer materials

Areas of investigation

Atmospheric-pressure plasma, electrical discharges – production and characterization, Plasma processing techniques and irradiation methods for materials treatment, Analysis of surface properties, Methods for producing new polymer composite materials, Surface/interface processes at the fluid – solid contact

Publications

38 ISI-ranked papers, 14 non-ISI papers, 1 book chapter – international publisher, 4 books and 1 book chapter – national publisher

Conferences

32 papers *in extenso* in international conferences proceedings

Citations

> 1200 ISI citations, h-index = 18

Awards

3rd prize for the most cited paper in the last five years (2008) – Plasma Sources Science and Technology Most Highly Cited Paper Awards (IOP Publishing)

Projects

director of 3 national scientific grants, member of 15 national scientific grants, member of 2 international scientific grants

Research

Research officer (2002-2003) – University of Ulster, Coleraine, Northern Ireland, UK, Surface Science Laboratory (electrical discharges at atmospheric pressure for potential industrial applications)

Senior researcher (2001) – Facultés Universitaires Notre-Dame de la Paix, Namur, Belgium, Interdisciplinary Laboratory of Electronic Spectroscopy (LISE) (Development of complex new methods for producing polymer and composite materials with special properties)

ANNEXES
List of relevant publications

- Hategescu, I.; Borgia, C.; Ciobanu, R.; **Borgia, G.** Discharge Energy Versus Exposure Time in Atmospheric-Pressure Air Plasma Surface Treatment of Polyimide and Polyamide 6 Films. (17) 2025, 17, 1394.
- Ciobanu, R.; Mihaila, I.; Borgia, C.; **Borgia, G.**; Adhesion Properties and Stability of Polar Polymers Treated by Air Atmospheric-Pressure Plasma. *Polymers* 2024, 16, 1552.
- Birleanu, E.; Mihaila, I.; Topala, I.; Borgia, C.; **Borgia, G.**; Adhesion Properties and Stability of Non-Polar Polymers Treated by Air Atmospheric-Pressure Plasma. *Polymers* 2023, 15, 2443.
- Rusu, G. B.; Topala, I.; Borgia, C.; Dumitrescu, N.; **Borgia, G.**, Effects of Atmospheric-Pressure Plasma Treatment on the Processes Involved in Fabrics Dyeing. *Plasma Chemistry and Plasma Processing* 2016, 36 (1), 341-354.
- Borgia, C.; Punga, I. L.; **Borgia, G.**, Surface properties and hydrophobic recovery of polymers treated by atmospheric-pressure plasma. *Applied Surface Science* 2014, 317, 103-110.
- Chiper, A.; **Borgia, G.**, Argon Versus Helium Dielectric Barrier Discharge for Surface Modification of Polypropylene and Poly(methyl methacrylate) Films. *Plasma Chemistry and Plasma Processing* 2013, 33 (3), 553-568.