

PERSONAL INFORMATION

Mihai GANCIU - PETCU



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💬 skype

Sex Male | Date of birth 09/05/1955 | Nationality Romanian

WORK EXPERIENCE

1980 - 1990

Institute of Atomic Physics

- Scientific Researcher: Plasma focus, military laser applications, detection of pulsed neutrons and X-rays

1990 - present

National Institute for Laser, Plasma and Radiation Physics (NILPRP)

- Scientific researcher III degree (1990-1996) : intense pulsed electron beams in hollow cathode transient discharges
- Scientific researcher II degree (1996-2000) : Electron beam transport on dielectric surfaces (Cruise Effect) and pulsed X-ray sources
- Scientific researcher I degree (2000 - present) : fast pulsed discharges, ionized physical vapor deposition, laser-plasma interaction, magnetized plasmas for analytical applications
- R&D director of the Romanian Centre of Induced Gamma Emission (1996-2002)
- Scientific Director and founding member of ARTEES (<http://artees.artees.fr>)
- Invited Research Director in CNRS, LPGP, Université Paris-Sud, France (2005–2008): Non equilibrium discharges for active species generation, particularly atomic nitrogen; applications for decontamination and surface treatment (EU and US Patent, first inventor); high power pulsed discharges; applications to thin film depositions (US Patent, first inventor)
- Invited professor in Université Paris-Sud, France (12 months in the period 1993-2005)
- Invited professor in Institut des Matériaux Jean Rouxel, Nantes France (4 months in the period 2008-2011)
- Head of Pulsed Transient Plasma Group (PTPG) from Low Temperature Plasma Laboratory - NILPRP (1996 – present)

EDUCATION AND TRAINING

1996	PhD in Plasma Physics, Institute of Atomic Physics, Bucharest <ul style="list-style-type: none"> supervisor : Acad. Prof. Ioan Iovit Popescu
1980	BSC and MSC in Electronics, Polytechnic Institute of Bucharest

PERSONAL SKILLS

Mother tongue(s) ROMANIAN

Other language(s)	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
ENGLISH	C1	C2	C1	C1	C1
FRENCH	C2	C2	C2	C2	C2

Communication skills Good communication skills gained through my experience with multiple national and international scientific collaborations

ADDITIONAL INFORMATION

Publications
(157 publications in international reviews or peer-reviewed conf. proceedings, 8 patents and patent families,

List of the 10 most important papers:

1. M. Ganciu, A. Surmeian, C. Diplasu, I. Chera, G. Musa, I. Iovitz Popescu, Quasi cw laser at 585.3 nm of the ne I line in Ne-H mixture in a simple co-axial alternative discharge, *Opt. Commun.* 88, 381 (1992)
2. M. Ganciu, M. Dinescu, I.N. Mihailescu, A. Barborica, Laser induced acoustic waves : a possible approach to the formation of surface structures, *Opt. Commun.* 97, 199 (1993)
3. M. Ganciu, G. Modreanu, A.M. Pointu, I.I. Popescu, Generation of intense pulsed electron beams by superposition of two discharges, *J. Phys. D.-Appl. Phys.* 27, 1370 (1994)
4. M. Ganciu, E. Dewald, M. Nistor, D. Penache, I. I. Popescu, V. Zoran, Surface guided electron beams on dielectric fibers (the Cruise Effect) *Rom. Journ. Phys.* 39, 787 (1994)
5. M. Ganciu, I. I. Popescu, V. Zoran, A. M. Pointu, A high density pulsed ion trap, *Nucl. Instr. and Method in Phys. Res. B* 98, 541 (1995)
6. Ganciu M, Orphal J, Pointu A M and Vervloet M, "Determination of atomic nitrogen concentrations using titration with molecular oxygen" *Chem. Phys. Lett.* 413 (2005) 468
7. M. Ganciu, S. Konstantinidis, Y. Paint, J. P. Dauchot, M. Hecq, L. de Poucques, P. Vašina, M. Meško, J. C. Imbert, J. Bretagne, M. Touzeau "Preionised pulsed magnetron discharges for ionised physical vapour deposition", *J. Optoelectron. Adv. Mater.*, vol. 7, pp. 2481-2484, Octobre 2005
8. S. Konstantinidis, J. P. Dauchot, M. Ganciu, A. Ricard, M. Hecq, "Influence of pulse duration on the plasma characteristics in high-power pulsed magnetron discharges", *J. Appl. Phys.* 99, 013307 (2006)
9. *Pulsed glow discharges for analytical applications*, Ph. Belenguer, M. Ganciu, Ph. Guillot and Th. Nelis, *Spectrochimica Acta Part B: Atomic Spectroscopy*, 64, Issue 7, (2009) 623-641
10. *Polaritonic pulse and coherent X- and gamma rays from Compton (Thomson) backscattering*, M. Apostol and M. Ganciu, *J. of Appl. Phys.*, **109** (2011) 013307, selected as Research Highlight

List of the most important patents (<http://patents.justia.com/inventor/mihai-ganciu-petcu>)

1. Mihai Ganciu-Petcu, Michel Hecq, Stephanos Konstantinidis, Jean-Pierre Dauchot, Jean Bretagne, Ludovic de Poucques, Michel Touzeau, „Deposition by magnetron cathodic pulverization in a pulsed mode with preionization”, *European Patent Appl.*, 4447072.2, WO 2005/090632, EP1580298 (A1), extension : US, Japon, Chine, Russie. US Patent: 7927466 B2, Apr 19, 2011
2. Mihai Ganciu-Petcu, Anne Marie Pointu, Bernard Legendre, Johannes Orphal, Michel Vervloet, Michel Touzeau and Naget Yagoubi, "Method for decontamination using atomic nitrogen, US Patent Appl. 10/610158, published December 30, 2004, WO 2005/002630, EP1638616 (A0), US Patent: 7229582 B2 / June 12, 2007, European Patent EP 1638616 B1, 10/03/2010
3. Mihai Ganciu-Petcu, Constantin Diplasu, Agavni Surmeian, Andreea Groza, Agnes Tempez, Patrick Chapon, Michel Casares, Olivier Rogerieux, "Source magnétron pour spectromètre à décharge luminescente", *French Patent Application* 0850055, 04 January 2008, International Application: PCT/FR2009/05008, French Patent FR2926161 (B1) 2012-02-10
4. Mihai Ganciu-Petcu, Mircea-Virgil Udrea, Agnes Tempez, Patrick Chapon, "Lampe à décharge pour GDS à champ magnétique axial" *French Patent Application* 0950848, 11 February 2009, International Application: WO/2010/092301, US2011291567(A1) 2011-12-01, JP2012517586 (A) 2012-08-02, FR2942071 (B1), 2011-04-08, EP2396645(B1) 2013-01-09, US8581494 (B2) 2013-11-12, JP5529168 (B2) 2014-06-25.
5. Mihai Ganciu-Petcu, M. Piso, O. Stoican, B. Mihalcea, C. Diplasu, O. Marghitu, A. Julea, A. Surmeian, A. Groza, R. Dabu, I. Morjan, System and method for testing components, circuits and complex systems using synchronized and pulsed laser fluxes consisting of laser accelerated particles, RO130134-A2; 26.08.2014, International Patent Application WO2015030619-A1;

Principal projects :

Projects
(Coordinator of 4 national projects and 6 international projects;)

- Romanian coordinator of the French-Romanian Network for Research and Training 96P0079 "High power pulsed electron beams: characterisation, optimisation and applications" (1997-2000)
- Principal investigator of the F61775-00-WE061 contract with EOARD-US Air Force "Fast pulsed X-ray sources tightly coupled with small targets for isomer triggering studies"(2000-2001),
- Coordinator of the WP2: Generation of plasma knowledge for RF-GD-TOF-MS of the 032202 EMDPA(www.emdpa.eu), STREP-FP6 EU project (2006 – 2009).
- Director of the Centre of Competences for Space Technology "Laser Plasma Acceleration of Particles for Radiation Hardness Testing" – Leopard project (2013-2017).
- Author of the ESA project "Feasibility Study for the Use of the Romanian CETAL Infrastructure" (ERAJUICE - Emulation of the Jovian Radiation Environment in support of the JUICE mission) (2014-2017)
- Author of the ESA project " Laser Plasma Accelerators as tools for Radiation Hardness Assessment (RHA) Studies and Tests in support of ESA space missions (PARAHARD)" (2017-2019)

- Invited Conferences (9)**
- M. Ganciu, "Fillamentary x-ray source by "Cruise Effect", First Int. Workshop on Induced gamma emission, IGE'97, Predeal (Romania), 16-20 August, 1997
 - M.Ganciu, A.M.Pointu, "Electron beams generated in open hollow cathode low pressure transient discharges", International Conference on Phenomena in Ionized Gases, (ICPIG), Warsaw (Poland), 11-16 July, 1999
 - M. Ganciu, "X ray sources for isomers studies" Second Int. Workshop on Induced gamma emission, Telluride (Colorado), 30 May-1 June, 2001
 - M.Ganciu, "Pulsed Physical Vapour Deposition", GDR, TEMPPS, Orleans (France) 27-28 May, 2004
 - M. Ganciu "Fast pulsed magnetron discharges", presented at Nouvelles Tendances en Procédés Magnétron et Arc pour le Dépôt de Couches Minces, June 7- 8, 2006 Grenoble (conférence invitée)
 - M. Ganciu "Preionized High Power Fast Pulsed Magnetron Sputtering: Principles and Applications" Symposium on Ionized Physical Vapor Deposition, Kolmården, Sweden, June 28 to July 1, 2007
 - M.Ganciu "Fundamentals of preionised HPPMS", 57th IUVESTA Workshop, Mons, November 12-15, 2008, Belgium.
 - Etc.
- Citations** Hirsch index = 18 (web of science) and 21 (Google scholar), Citations = 1537
- Awards**
- Conference award of the International Plasma Conference CIP-1995, Antibes, France
 - Research valorization award, Univ. Paris-Sud, Conseil Général de l'Essonne, 2004
 - Award of the Institute of Atomic Physics, 2010
 - Palmes Academiques, 2012 (<http://www.inflpr.ro/ro/node/1150>, <http://web.afi-sa.net/institutfrancais-roumanie.com/cms/articleview/id/2785>)

ANNEXES

RESEARCH ABROAD

Scientific coordinator of industrial and scientific valorisation of **DV 63331** (IPVD by Pulsed Magnetrons Sputtering) and **DV 63363** (Decontamination by Atomic Nitrogen),

CNRS –Paris –Sud University, France, IMN, Nantes France, Materia Nova, Mons, Belgium

Visiting Professor at the University of Paris-Sud, (1993, 1996, 1997, 1998, 200, 2001, 2003)

Research Valorization Award of the General Council of Essone in 2004 for the discover of a new process for the production of atomic nitrogen at atmospheric pressure using a new principle for the generation of non-equilibrium plasmas. This result, which has, an US Patent issued in 2007 and an EU Patent issued in 2010, is at the basis of the unique technological start-up founded in France as a result of a French-Romanian scientific cooperation.

<http://web.afi-sa.net/institutfrancais-roumanie.com/cms/articleview/id/2785>

<http://www.inflpr.ro/en/node/1150>

Romanian initiator of the PULSE project (Erasmus +) (2019 - 2022)

RESEARCH FIELDS of HIGHEST INTEREST

Non equilibrium fast discharges for active species generation at low and high pressure.

Ionized Physical Vapour Deposition by using high power pulsed discharges; applications to thin film depositions and material testing.

Magnetised RF plasmas and ion generation and transport in GD-OES and GD-MS systems

Particle acceleration in laser-plasma interaction

Radiation Hardening by using very high power lasers

Self organisation assisted by high intensity electric and magnetic fields.