CURRICULUM VITAE

First Name: Gabriel

Family Name: Moagăr-Poladian

Present status: Senior Researcher at the National Institute for R&D in Microtechnology-Bucharest

Research interests: microsensors, micro- and nanostructures with tailored properties, rapid prototyping, rapid prototyping at the micro- and nanoscale, nanolithography, dip pen nanolithography, SPM-based nanolithography in general, optoelectronics, applications of photonics in MEMS / NEMS fabrication

Contact data: gabriel.moagar@imt.ro

Studies: MSc and PhD from the Faculty of Physics of Bucharest University in 1990 and 1999, respectively, in solid state physics / optoelectronics

Membership to professional societies: Romanian Physical Society, Romanian Society of Crystal Growth, European Physical Society, European Optical Society, Optical Society of America

1) List of papers

1. G. Moagăr-Poladian **-** *Sub-Wavelength Resolution Laser Lithography in the Field of MEMS*, SPIE Proceedings Vol. 7007, p. 70070L-1 – 70070L-11, (2008).
2. G. Moagăr-Poladian, Z. Illyefalvi-Vitez, B. Balogh, D. Ulieru, A. Corâci - *Laser Applications in the Field of MEMS*, SPIE Proceedings Vol. 7007, p. 70070K-1 – 70070K-10, (2008).
3. G. Moagăr-Poladian - *On the Light Pressure Induced in a Medium by the Non-Uniform Light Intensity Distribution*, Journal of Optics A: Pure and Applied, vol. 9, p. 767 – 776, (2007).
4. G. Moagăr-Poladian, D. Ulieru, C.Sandu, M. Bulinski, A. Dinescu, M. Dănilă, R. Gavrilă - *Microengraving of a Potassium Dihydrogen Phosphate Crystal by Laser Ablation Technique,* Proceedings of SPIE vol. 5455 (Photonics Europe 2004 Conference, Strasbourg, France), pp. 375 - 380, (2004).
5. G. Moagăr-Poladian - *Spatial Light Modulators Based on Structures Containing Photoelectrets and Electro-optic Materials: Key Devices for Optical Computing*, Journal of Optical Technology (English version of Russian Opticheskii Zhurnal), vol. 71, no. 7 p. 478 - 486 (2004).
6. G. Moagăr-Poladian, M. Bulinski – *"Reconfigurable Optical Neuron Based on the Transverse Pockels Effect"*, Journal of Optoelectronics and Advanced Materials vol.4, no.4 p. 929 – 936 (2002).
7. G. Moagăr-Poladian – *The Theory of the Basic Optoelectronic Behaviour of the Tunnel Diode,* Applied Optics volume 40 no. 33, p. 6086 – 6097 (2001).
8. V. Moagăr-Poladian, G. Moagăr-Poladian – *Finite Element Simulation of a New Type of All-metal Infrared Detector,* Proceedings of the SENSOR 2001 Conference (May 8 – 10 2001, Nuremberg, Germany), vol.1, p. 275 – 280 (2001).

9. G. Moagăr-Poladian – *Image Amplifier Based on a Photoelectret-Electrooptic Medium Sandwich-type Structure*, Journal of Optics Part A: Pure and Applied vol. 2 no.6, p. 569 – 575 (2000).
10. G. Moagăr-Poladian – *A Novel Type of Thresholding Element for Optoelectronic Neurons*, Romanian Journal of Information Science and Technology vol.3, no.4, p. 353 – 364 (2000).
11. G. Moagăr-Poladian - *Reconfigurable Optical Neuron Based on Photoelectretic Materials*, Applied Optics vol.39 no.5, p.782-787 (2000). -- (*See note 2 below*)
12. G. Moagăr-Poladian - *"MOS Transistor with Photoelectret Controlled Gate",* International Journal of Optoelectronics, vol.12 no.1, p. 1-7 (1998).
13. G. Moagăr-Poladian, V. Moagăr-Poladian - *Stress Determination in Dielectric Thin Films Using the Piezorezistive Effect,* Proceedings of the MME'98 Conference (MicroMechanics Europe), Ulvik i Hardanger, Norway, p. 307 – 310, (1998).
14. G. Moagăr-Poladian - *" An MOS Transistor with Optical Rectification Controlled Gate",* Semiconductor Science and Technology, vol. 12, p. 210-216 (1997).
15. G. Moagăr-Poladian - *"The Parallel Photoelectromagnetic Effect",* Proceedings Supplement of Balkan Physics Letters, vol. 5, part 2, p.1079-1082, (1997).
16. G. Moagăr-Poladian, C. Savaniu, T. Şerban, N. Năstase - *Cerium Doped Silica Glass Prepared by Sol-Gel Method,* RoCAM'97 Conference (Romanian Conference on Advanced Materials), Romanian Academy, Bucureşti, November 1997
17. E. Gheorghiu, G. Moagar-Poladian, T.G. Paunescu. *Determination of living cell concentration by on-line dielectroscopic measurements*, Proceedings of the 1st International Symposium "Biotechnologies Now and Tomorrow", Bucharest, Romania (June 24-25, 1993), p. 219-226.
18. G. Moagăr-Poladian - *A Method of Emissivity Determination,* The 27th European Seminar on Quantitative Infrared Thermography QIRT'92, Paris, France, July 1992.
19. G. Moagăr-Poladian - *The Determination of Optical Indicatrix Axes in Uniaxial Nonlinear Crystals,* National Conference of Physics CNF'90, Cluj, Romania, October 1990.
20. G. Moagăr-Poladian – *Optical Logical Gates Based on Saturable Absorbers. Working Principles.* National Conference on Electronics, Communications, Automation and Computers CNETAC'88, Bucureşti, Romania, December 1988.

Note

1. Papers [1], [2], [3], [6], [7], [9], [11], [13], [16] are selected by and stored in the Smithsonian/NASA Astrophysics Data System (ADS) database, please see the link at the address:
http://adsabs.harvard.edu/cgi-bin/nph-abs_connect?return_req=no_params&&author=Moagar-Poladian,+G&db_key=INST

2. Paper [15] was mentioned as being state-of-the-art, presenting interest for the field of optical computers based on neural networks, in the John Wiley & Sons INSIDE R&D publication (see http://www.wiley.com/technical_insights/), as indicated below:
- H.Goldstein – "New Structure Proposed For All-Optical Neurons" , Inside R&D vol.29 no.13 p. 2, March 29, 2000.

2) General dissemination papers

1. G. Moagăr-Poladian – *Optical Reconfigurable Neuron – Research, Demonstrator Experimentation and Parameters Evaluation*, Micro and Nanotechnologies Bulletin, ed. IMT-Bucharest and Ministry of Education and Research from Romania, vol.3 no.4 p.8, December 2002.
2. G. Moagăr-Poladian - *Reflection conoscope*, MikroMedia No. 38, May 2007, http://www.ivam.de/index.php?content=mitteilung_details&mitteilung_id=1005

3) Patents

1. G. Moagăr-Poladian - *Method and equipment for guided transmission of information through fluid media and/or plasma by using electromagnetic radiation*.
2. G. Moagăr-Poladian - *Method and installation for maintaining pipes rectilinear*.
3. G. Moagăr-Poladian - *Structure for thermal and mechanical insulation of pipes*.
4. G. Moagăr-Poladian - *Antireflective structure for electromagnetic radiation*.
5. G. Moagăr-Poladian - *Broadband reflective element*.
6. G. Moagăr-Poladian - *Schottky diode for optoelectronic applications*.
7. G. Moagăr-Poladian – *Procedure and equipment for conoscopic measurements in optically anizotropic thin films*.
8. G. Moagăr-Poladian, V. Moagăr-Poladian – *Structure for the thermal management of integrated circuits and microsystems*.
9. G. Moagăr-Poladian, V. Moagăr-Poladian – *Structure for the bonding of microsystems and integrated circuits*.

4) Patent requests

1. G. Moagăr-Poladian – *Device for detection of infrared radiation*.
2. G. Moagăr-Poladian – *Method and equipment for measuring the refractive index*.
3. G. Moagăr-Poladian – *Procedure for measuring ultra-small displacements by using total internal reflection*.
4. G. Moagăr-Poladian – *Nanostructured material with electro-optic properties*.
5. G. Moagăr-Poladian – *Microelectrodes for electrical discharges in gases and in vacuum*.
6. G. Moagăr-Poladian – *Electric field sensor*.
7. G. Moagăr-Poladian, V. Moagăr-Poladian – *Method for slicing semiconductor and dielectric wafers by using laser radiation*.
8. G. Moagăr-Poladian, V. Moagăr-Poladian – *Procedure for the calibration of thermal expansion of cantilevers in dip pen nanolithography*.
9. G. Moagăr-Poladian – *Procedure of optically assisted 2D and 3D fountain pen nanolithography*.

5) Medals and prizes

- The Gold Plus Medal (Highest) at the 55th World Exhibition of Innovation, Research and New Technology, Bruxelles, Belgium, November 2006. Title of the invention: - *Method and equipment for guided transmission of information through fluid media and/or plasma by using electromagnetic radiation*. Author: **Gabriel Moagăr-Poladian**.
- The Gold Medal ARCA of the Croatian Association of Inventors at the 55th World Exhibition of Innovation, Research and New Technology, Bruxelles, Belgium, November 2006. Title of the invention: - *Method and equipment for guided transmission of information through fluid media and/or plasma by using electromagnetic radiation*. Author: **Gabriel Moagăr-Poladian**.
- The 2006 Cup of the International Federation of the Inventors' Association at the 10th Invention Fair INVENTIKA 2006, held in September 2006 in Bucharest, Romania. Title of the invention: - *Method and equipment for guided transmission of information through fluid media and/or plasma by using electromagnetic radiation*. Author: **Gabriel Moagăr-Poladian**.
- The Gold Plus Medal (Highest) at the 10th Invention Fair INVENTIKA 2006, held in September 2006 in Bucharest, Romania. Title of the invention: - *Method and equipment for guided transmission of information through fluid media and/or plasma by using electromagnetic radiation*. Author: **Gabriel Moagăr-Poladian**.
- The Silver Medal at the 33rd International Exhibition of Inventions, New Techniques and Products, Geneva, Switzerland, April 2005. Title of the invention: *Structure for the thermal management of integrated circuits and microsystems*. Authors: **Gabriel Moagăr-Poladian**, Victor Moagăr-Poladian.
- The Silver Medal at the 53th World Exhibition of Innovation, Research and New Technology, Bruxelles, Belgium, November 2004. Title of the invention: *Procedure and equipment for conoscopic measurements in optically anisotropic thin films*. Author: **Gabriel Moagăr-Poladian**.
- The Silver Medal at the 51th World Exhibition of Innovation, Research and New Technology, Bruxelles, Belgium, November 2002. Title of the invention: *Antireflective Structure for Electromagnetic Radiation*. Author: **Gabriel Moagăr-Poladian**.

6) Projects

- coordinated projects: 10 national projects
  - among results: novel concepts developed, experimental models tested, certified prototypes obtained, patents, published papers, original software developed
  - each team comprised, depending on project, between 25 and 60 members
  - value of the projects, depending on project, was between 200.000 Euro and 600.000 Euro

- participant in the projects of others: more than 15 national projects

7) Founder of laboratory

Co-founder and coordinator of the Experimental Laboratory for Advanced Technologies at the Micro and Nanoscale, National Institute of Microtechnology of Romania, laboratory dedicated to the development of novel technologies allowing fast realization of 2D and 3D micro and nanostructures.

8) Other positions

a) Member of the International Programme Committee of the “III International Conference For Students, Young Scientists and Engineers "Optics'2003" and Topical Meeting on Optoinformatics“, Sankt-Petersburg, 20 – 24 October 2003, Rusia of the ”Topical Meeting on Optoinformatics 2004“ and of the “ Topical Meeting on Optoinformatics 2005”.
b) Member of the International Programme Committee of the ‘’Industrial Applications of Lasers 2007’’ Conference, Bran, 23 – 25 May 2007, Romania.
c) Referee at the IEEE Transactions on Electron Devices journal
d) Referee at the Applied Optics journal
e) Referee at the Optics Express on-line journal
f) Referee at Optics Letters journal