

# CURRICULUM VITAE

Dr Rafael Drampyan

**Date and Place of birth** August 15, 1949, Yerevan, Armenia

**Education** (*degrees, dates, Universities*)

1972, graduated from Yerevan State University, Diploma of Physicist

1972-1975, Post-graduate studentship at the Institute for Physical Research of National Academy of Sciences of Armenia

1978- awarded the degree of Candidate of Phys.-Math. Sciences (PhD)

2005 - awarded the degree of Doctor of Phys.-Math. Sciences, Doctoral thesis “Nonlinear and magneto-optical phenomena in alkali metal atomic vapors and organic liquids”.

**Scientific position:** Senior research scientist, Co-head of Russian–Armenian Joint Laboratory of Micro- and Nano-structured Materials.

**Administrative position:** Scientific secretary

**Research interests:**

(i) main fields - laser physics, nonlinear optics

(ii) other fields – coherent processes in atomic vapors, magneto-optics

(iii) current research interests – singular optics, photonic crystals, photonic lattices

**Memberships in Professional Societies**

Member of Armenian Optical Society

Member of New York Academy of Sciences 1995-1999

**Awards:** Armenian young scientists Prize winner in the field of science, 1981

**International Fellowship awards:**

Jagiellonian University, Krakow, Poland, 2008

Open University, Milton Keynes, UK, 2002

Imperial College, Blackett Laboratory, London, UK, 2001

University of Glasgow, Scotland, UK, 2000.  
University of Electro-Communications, Tokyo, Japan, 1990  
Central Institute for Physical Research, Budapest, Hungary, 1985

**Current International Collaboration:**

Jagiellonian University (Krakow, Poland)  
Vladimir State University (Russia)  
University of Padova (Italy)  
University of Madrid (Spain)  
University of Ghent (Belgium)

**International Grants:**

Manager of the ISTC Project A-1517 “Engineering of 2D and 3D holographic gratings by Bessel and speckle beams in solid and liquid crystals: Application to photonic crystals”, 2008 – 2012.  
Manager of the Project ISTC SWS-181-11-SB-89 for promotion of organization of International Workshops- 2011.

**National Grants**

Head of the Project 1-6/ HK “ Development of new methods and technologies for creation of micro- and nano-structured refractive materials: Application to photonic crystals and information optical storage”, 2011-1012.

**Organization of Conferences**

International Conference “Photonics and Micro- and Nano-structured Materials”, 28-30 June, Congress Hotel, Yerevan, Armenia (Chair R. Drampyan)..

**Teaching activity:**

Professor of State Armenian-Russian (Slavonic) University

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**List of Selected Publications for last 5 years**

- 1) A. Badalyan, R. Hovsepyan, V. Mekhitarayan, P. Mantashyan, R. Drampyan, “Micro- and nano-scale photonic lattices induced by Bessel beam technique in doped lithium niobate crystals” in “Photonic Crystal Materials and Devices X”, Editors Hernan R. Miguez, Sergei G. Romanov, Lucio C. Andreani, **Proceedings of SPIE (2012) 8425** (SPIE, Bellingham, WA, 2012), 8425 1J 1-9.
- 2) A. Badalyan, R. Hovsepyan, V. Mekhitarayan, P. Mantashyan and Rafael Drampyan, “Photovoltaic and diffusion effects in formation of 1D and 2D gratings by Bessel beam technique”, in Photonics and Micro- and Nano-structured Materials 2011, edited by Rafael Kh. Drampyan, **Proceedings of SPIE (2012) 8414** (SPIE, Bellingham, WA, 2012), 8414 OU-1-10.

- 3) A. Badalyan, R. Hovsepyan, V Mekhitarian, P Mantashyan and R Drampyan, “Peculiarities of photonic lattices recording by Bessel beam technique in  $\text{LiNbO}_3\text{:Fe}$  crystal”, **Journal of Physics, Conference Series (2012) 350**, 012025-1–6.
- 4) A. Badalyan, T. Gevorgyan, R. Hovsepyan, V. Mekhitarian, P. Mantashyan and R. Drampyan, “Engineering of 2D and 3D holographic gratings in photorefractive media,” in Photonics and Micro- and Nano-structured Materials 2011, edited by Rafael Kh. Drampyan, **Proceedings of SPIE (2012) 8414** (SPIE, Bellingham, WA, 2012), 8414 05-1-11.
- 5) A. Badalyan, P. Mantashyan, V. Mekhitarian, V. Nersesyan and R. Drampyan, “Near and far field optical patterns formation by rotational symmetry masks: Application to optical spatial soliton generation”, **International Journal of Modern Physics: Conference Series (2012) 15**, 113–119.
- 6) A. Badalyan, R. Hovsepyan, V. Mekhitarian, P. Mantashyan and R. Drampyan “Talbot Effect from Rotational Symmetry Gratings: Application to 3D Refractive Grating Formation”, **Mol. Cryst. Liq. Cryst. (2012) 561**, 57–67.
- 7) Badalyan, R. Hovsepyan, V. Mekhitarian, P. Mantashyan and R. Drampyan, “Optical induction of 2D and 3D photonic lattices in photorefractive materials based on Talbot effect “, WASET International Conference on Optics, Lasers and Spectroscopy”, Madrid, Spain, 28-30 March, 2012, **WASET Book of Proceedings, (2012) Part IV**, pp. 593–597.
- 8) A. Badalyan, R. Hovsepyan, V. Mekhitarian, P. Mantashyan, R. Drampyan, “Combined interferometric-mask method for creation of micro- and sub-micrometric scale 3D structures in photorefractive materials”, in International Conference on Laser Physics 2010, edited by Aram V. Papoyan, **Proceedings of SPIE (2011) 7998** (SPIE Bellingham, WA, 2011) 7998OH-1–10
- 9) A.Badalyan, R.Hovsepyan, V.Mekhitarian, P.Mantashyan, R. Drampyan, “New holographic method for formation of 2D gratings in photorefractive materials by Bessel standing wave”, in “Fundamentals of Laser Assisted Micro- and Nanotechnologies 2010, Edited by Vadim P.Veiko, Tigran A.Vartanyan, **Proceedings of SPIE (2011) 7996** (SPIE Bellingham, WA) 799611-1–9.
- 10) R.Drampyan, S Pustelny and W. Gawlik, “Electromagnetically induced transparency versus nonlinear Faraday effect: Coherent control of light-beam polarization”, **Physical Review A (2009) 80**, 033815-1–9.
- 11) **The book “New Trends in Quantum Coherence and Nonlinear Optics”**, in Series “Horizons in Word Physics”, V.263, **Editor Rafael Drampyan**, Nova Science Publishers Inc., New York, **2009**.
- 12) R. Kh. Drampyan A. D. Greentree A. V. Durrant, “Doppler-free nonlinear Faraday rotation spectroscopy of Rb atoms”, in the Book “**New Trends in Quantum Coherence and Nonlinear Optics**”, in Series “Horizons in Word Physics”, V.263, Editor Rafael Drampyan, Nova Science Publishers Inc., New York, **2009**, Chapter VIII, pp. 221-241.
- 13) R. Kh. Drampyan; A. D. Greentree; A. V. Durrant, “Two-field nonlinear Faraday rotation in rubidium vapor in a Doppler-free geometry”, **Optics Communications (2007) 276**, 251–260.
- 14) R. Kh. Drampyan; A. D. Greentree; A. V. Durrant , “Pump-probe spectroscopy of Rb atoms in an external magnetic field”, in the Book “**Optics Research Trends**”, Editor Paul V. Gallico, Nova Science Publishers Inc., New York, **2007**, Chapter VII , pp 271-303.