

Curriculum Vitae

Gurgen MELKONYAN, PhD.

873 Rue Jean-Noel, Quebec, QC, G1X 2N3,
phone: 1 (418) 262-4584; E-mail: melkonya@chapman.edu; also: gengmel@gmail.com ;
Canadian Citizen

EDUCATIONAL BACKGROUND

- 1997-2002 **PhD** degree, Condensed matter physics. Department: Physics, Engineering physics and Optics, Laval University, Quebec.
- 1987-1990 **Master's** degree (equiv.) in Theoretical Solid-State Physics and Quantum Electronics, Moscow Engineering Physics Institute, Special Department of Physics, Moscow, Russia.
- 1983-1987 **B.Sc.** degree (equiv.) in Theoretical Physics, Yerevan State University, Armenia.

GENERAL EXPERIENCE

Condensed Matter Physics, Superconductivity, Solid-State Physics, Computational Physics, ab-initio computations, Nano-physics, Statistical data analysis, Biology, Polarization Discrimination Imaging in Biology, Quantum Computing, Nonlinear Physics, Mathematical Physics, Stochastic Methods in Physics, Electronics, Neural Networks, Robotics, Statistics.

Experience in the full cycle of measuring apparatus design. Design and realization of different experimental setups, such as acquisition and image processing. Design and automation different industrial setups, such as acquisition and quality control. Design and realization of different measurement apparatus. Data acquisition. Image processing.

COMPUTER SKILLS

Parallel computing, High Performance computations.

Fortran F77, F90/95.

C/C++, C, C Sharp. MatLab, Comsol (Femlab).

Labview, LabCVI Origin C, Mathematica, Photoshop, MathCad, Maple.

Experience in Modern Operating System Administration: UNIX, Linux, OpenBSD, Windows from 98 to windows 10.

I have work experience in system and network administration, skills in computer hardware. I have in computer hardware. I am able to provide support for computer users of different level of knowledge in informatics. I have experience in computer real-time programming for communications using Matlab, Labview, c/c++ or Basic, LabCVI.

LANGUAGES

French, English, Russian, Armenian.

PROFESSIONAL EXPERIENCE

Affiliated Scholar: Institute of Quantum Studies, Chapman University 2015-Present, USA.

Invited researcher: Chapman University, 2013.

Invited researcher: Chapman University, 2012

Consultant: Entreprise privé GMLab, Québec, Canada /2012-Présent

► Feasibility estimates for Hi-Teck companies demanding high performance computations..

Research officer: National Institut of public health of Quebec (INSPQ) 2008-2012.

► Numerical modeling of Herpes zoster virus propagation in Canada. Economic estimations, risk estimations, planning.

Post-docs:

Centre de recherche Robert Giffard Université Laval /2003-2007.

► Computational physics, statistical methods in computational physics, biology, biophysics. Numerical modeling of two component ionic currents in lamina I dorsal neurons, using Monte-Carlo technique and analytical methods. Laval University, Quebec Canada /2002-2003.

► Quantum computing, probability and statistics. Generalization of the quantum action formalism for periodic potentials.

Research Associate:

Physics Department, Laval University, Québec /1997-1999.

► Nonlinear and statistical physics, electronics, quantum chaos, optics.

Subject2: Non-linear self-action of optical pulses. Bragg Gratings.

Moscow Engineering Physics Institute (MEPhI) / 1994-1997.

► Investigation of the tunnel characteristics of superconductor-insulator-normal metal (SIN) tunnel junctions in the polaron model of superconductivity. Superconducting quantum interference device (SQUID). Andreev reflection. Neutron scattering in the local pair theory of superconductivity.

Post-Graduate Research Associate: MEPhI, Russia / 1991-1994 .

► Investigation of tunneling characteristics of SIN and superconductor- semiconductor (S-Sem) tunnel junctions (detectors) in the polaron and bipolaron models of superconductivity.

Graduate Student: MEPhI, Russia /1990-1991.

► Investigation of tunnel junction characteristics in the local pair model of superconductivity.

TEACHING EXPERIENCE

1997-2002

Corrector for “Quantum Mechanics” and “Mathematical Physics” courses. Preparation of a course in “Computational methods in Physics”.

1990-1991 Teaching stager in Moscow engineering physics institute (university).

SCHOLARSHIPS AND AWARDS

1997-2002

Doctorate Fellowship of Quebec Government: "Bourse d'excellence du Gouvernement du Québec".