

# CURRICULUM VITAE

## 1. PERSONAL DATA

**Surname:** DASCALU  
**First name:** Traian  
**Date/Place of Birth:** 05 December 1956 / Davidesti, Arges, Romania  
**Nationality:** Romanian  
**Gender:** Male

**Languages:** English (spoken and written)  
Spanish (spoken and written)  
Japanese (medium)  
Romanian (native language)

**Office:** National Institute for Laser, Plasma and Radiation Physics (INFLPR)  
Laboratory of Solid-State Quantum Electronics  
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## 2. EDUCATION AND TRAINING

### **PhD in Physics**

Dates / Institution: 1993 / Institute of Atomic Physics, Bucharest, Romania  
Title of the thesis: "New Aspects of the High-Power Solid-State Lasers"  
Specialization: Optics, Spectroscopy and Lasers

**Diploma in Physics** 1982, Faculty of Physics, University of Bucharest, Romania

**Post PhD Scholarship** 1995, Optical Institute, Technical University Berlin, Solid-State Laser Institute  
(Supervisor: Professor Dr. Horst Weber)

### **Workshops:**

- Training in structural funds from Welcome Europe (Camille Constans), "How to get structural funds for Romanian Organisations" seminar, 10-12 December 2007, Paris, France.
- NATO Advanced Research Workshop on Optical Resonators - Theory and Design, 01-05 July, 1997, Smolenice Castle, Smolenice, Slovakia.
- 2nd EPS Workshop on Medical and Industrial Applications of Lasers, organized by the European Community, 23-27 May 1994, Crete, Greece.

### 3. PROFESSIONAL EXPERIENCE

#### **National Institute for Laser, Plasma and Radiation Physics (INFLPR)**

Laboratory of Solid-State Quantum Electronics

409 Atomistilor Str., P.O. BOX MG-36, Bucharest R-077125, Romania

Period / Position:	04/2010 - present	Deputy Director of INFLPR
	12/2007 - 04/2010	Head of the Laboratory of Solid-State Quantum Electronics
	1996 - present	Senior Scientific Researcher
	1985 - 1996	Scientific Researcher

#### **Fukui Association of Industrial Technology, Fukui, Japan**

Period / Position: 2001 - 2005 Invited Researcher

#### **Optical Research Center, Leon, Mexico**

Period / Position: 1998 - 2000 Invited Researcher

#### **Optical Institute, Technical University Berlin, Solid-State Laser Institute, Berlin, Germany**

Period / Position: 1995 Postdoctoral Fellow, supervisor Professor Dr. Horst Weber

#### **National Institute for Electro-Technical Research, Bucharest, Romania**

Period / Position: 1984-1985 Physicist

#### **National Institute for Research on Nuclear Reactors, Pitesti, Romania**

Period / Position: 1982-1984 Physicist

### 4. RECENT RESEARCH TOPICS

#### **THz TDS spectroscopy for biological tissues**

- New THz sources;
- THz spectroscopy of large biomolecules.

#### **High power edge pumped microchip Yb:YAG lasers**

- Analysis, design and fabrication of microchip Yb:YAG lasers, edge pumped, active mirror;
- Die-bonding technology: study and applications;
- Thermal effects distortion on Yb:YAG microchip;
- Short pulse laser generation.

#### **Development of new solid-state lasers**

- Extended laser resonator analysis correlated with experimental results.
- Laser beam correction by using adaptive mirrors.
- High energy Nd:YAG laser with active and passive Q-switch.

#### **Advanced techniques based on solid-state lasers for industrial application**

- Laser scribing and marking.
- Laser drilling in hard and brittle materials.
- Controllable thin film removal by using Q-switched lasers.

#### **Laser beam interaction with hard and soft biological tissues**

- Shock wave fragmentation of kidney stones and gallstones by 2.09  $\mu\text{m}$  laser pulses.
- Corneal collagen fibril shrinkage under Ho laser irradiation pulses.

#### **Multi-axial laser-beam processing equipment**

- Design and fabrication.

## **5. MISCELLANEOUS**

- Reviewer:** Optics Letters, Optics Express  
Optics Communications, Opt. & Laser Technology, Optical Materials
- Academic activity:** - Supervisor of more than 20 students for diploma degree preparation, Faculty of Physics, University of Bucharest;  
- Teaching at Optical Research Center, Leon, Mexico, six semesters, doctoral student level:  
    1. Industrial and Medical Laser Applications  
    2. Laser Interaction with Biological Tissue
- Memberships:** - Optical Society of America (OSA)
- Computing experience:** - Mathematica, Ansys, Optica, Igor, Paraxia  
- MS-Office, Claris Work, Draw, Kaleida Graph, Canvas, Corel Draw, Adobe Photoshop, etc