



Federico Pirzio

Curriculum Vitae

Education and career

- Oct 2011– **Assitant Professor of Physics**, *University of Pavia*, Department of Electrical, Computer and Biomedical Engineering.
- Nov 2006–Sept 2011 **Research Fellow**, *University of Pavia*, Electronics Department.
- Oct 2003– Oct 2006 **Ph.D. Student - Ph. D.School in Electronics Engineering and Computer Sciences**, *University of Pavia*, Electronics Department, Ph. D. Thesis: "*Picosecond mode-locked laser sources for fundamental physics investigations*".
- Jan 2004 **Enabled to the profession of Engineer by passing the Italian State Exam.**
- Mar 2003 **Master degree in Electronics**, *Mark 110/110*, Master Degree Thesis: "*Valutazione teorica e sperimentale dei parametri di progetto di un laser di elevata potenza a stato solido pompato a diodi*".
- Oct 1997– Jul 2002 **Fellow of the Almo Collegio Borromeo.**

Scientific activity

Since 2002 I do research in the field of diode pumped solid state lasers at the Laser Source Laboratory (LSL) of the University of Pavia. I study the design and numerical modelling of diode pumped solid state lasers sources and laser systems in every functioning regime (continuous wave, nanosecond and sub-nanosecond Q-Switching regime, picosecond and femtosecond mode-locked regime). In particular, my main research topics are:

- study and development of laser systems in Master Oscillator Power Amplifier (MOPA) architecture with the aim of generation and amplification of ultra-short, high energy pulses at 1 micron; harmonic generation and parametric generation and Raman generation of new wavelengths;
- study and development of diode-pumped femtosecond lasers at 1 micron;
- characterization of new laser materials doped with Nd^{3+} and Yb^{3+} and working at 1 micron; study and qualification of new nanostructured saturable absorbers;
- study and optimization of amplification stages for picosecond and femtosecond pulses;
- research on actively and passively Q-Switched laser sources for industrial applications.

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Academic teaching experience

In the period 2004-2011 I served as teaching assistant for Physics courses at the Engineering Faculty and gave seminars in the courses of Photonics and Nonlinear Optics. I also have been responsible for special seminars and practical laboratory activities for the courses of Physics I in the period 2006-2009.

From the Academic year 2011 to 2014 I have been the lecturer for the course of "Physics II" (Electromagnetism) for the 1st level degree in Ingegneria Industriale (6 CFU/year). Since the Academic year 2012-2013 I'm also the lecturer of the course "Quantum Electronics" for the master degree in Electronic Engineering (6 CFU/year).

From the Academic year 2011 I'm the lecturer of the course "Physics I" (Classical Mechanics) for the 1st level degree in Ingegneria Civile e Ambientale (6 CFU/year).

Further teaching experiences and science communication

Apr 2010: Member of the organizing committee of Laserfest-PV.

Scientific publications

I'm co-author of 50 articles published in international peer-reviewed journals, co-author of 2 books chapters and more than 30 communications at national and international conferences (3 invited contributions).

Languages

Italian **Mother-tongue**

English **Advanced**

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