

Trento, 15-11-2000

## Curriculum Vitae

**Dr. Georg Pucker**

### Personal data:

Date of birth: 20.12.1978

Place of birth: Innsbruck

Citizenship: Austria

Marital status: married

Foreign languages: English (both written and spoken), and Italian (both written and spoken).

Native language: German

### Current address:

University of Trento

Department of Physics

Telephone: 0461/2092193

### Present position:

Università degli Studi di Trento, Italy (since November 1998): Researcher (Assegno di ricerca) at the Department of Physics working on the realisation of microcavity LED's based on (Si/SiO<sub>2</sub>) superlattices as active material. I am mainly concerned with the growth of the superlattices and cavities (modelled by a transfer-matrix approach) in a CMOS fabrication line (situated at ITC-IRST, Povo-trento, Italy) and their optical characterisation with different spectroscopic techniques. The growth of the samples is done within ITC-IRST (at Povo-Trento, Italy) and the growth process was developed in collaboration with Dr. P. Bellutti (ITC-IRST). The research is part of the project SMILE of the MEL-ARI OPTO cluster within the ESPRIT program by the European Commission.

### Former positions and academic carrier:

Università degli Studi di Trento, Italy (October 1996 - October 1998): Post doctoral position at the Department of Physics working on the preparation of rare-earth doped glasses (bulk, planar waveguides using different techniques such as melting and sol-gel processes and characterisation of their optical properties with different techniques (Raman and IR-Spectroscopy, Absorption and

Emission spectroscopy (temperature dependent, time resolved,..) m-line technique, attenuation measurements).

Graz University of Technology, Austria (April 1993 - February 1996): Performing my doctoral thesis at the Institute of Physical and Theoretical Chemistry investigating rare-earth doped glasses by means of optical spectroscopy.

Graz University of Technology, Austria (April 1993 - September 1995): Teaching assistant at the Institute of Physical and Theoretical Chemistry.

American University in Cairo, Egypt (April 1998): Lecturer at the International Course " Advanced Materials and Techniques - Spectroscopy, Glass, Laser"

Birkbeck College, University of London (June-July 1994) Research stay at the Department of Analytical Chemistry for the characterisation of rare-earth doped glasses by means of laser-spectroscopy.

Studies:

1986-1993: Graz University of Technology, Studies of Technical Chemistry

March 1993: Graduation to " Diplomingenieur der Technischen Chemie"

1993-1996: Graz University of Technology, Institute of Theor. and Phys. Chemistry, Doctoral thesis ( PhD ).

April 1996: Graduation to " Dr. Techn." (PhD).

Signature:

## Publications

15. G. Pucker, L. Pavesi, P. Bellutti,  
(Spectrochimica Acta A submitted)

14. L. Pavesi, G. Pucker, Z. Gaburro, M. Cazzanelli, P. Bellutti  
**Visible light emission from a new material system: Si/SiO<sub>2</sub> superlattices in optical microcavities**  
Kiev Nato Workshop - accepted

13. G. Pucker, P. Bellutti, C. Spinella, K. Gatterer, M. Cazzanelli, and L. Pavesi  
**Room temperature luminescence from (Si/SiO<sub>2</sub>)<sub>n</sub> (n = 1,2,3) multilayers grown in an industrial low pressure-chemical vapour deposition reactor**  
Journal of Applied Physics 88 (2000) 6044

12. G. Pucker, V. Mulloni, L. Pavesi, P. Bellutti, A. Lui, C. Spinella,  
**Visible luminescence from a Si superlattice embedded in high quality Si/SiO<sub>2</sub> optical microcavities**  
(Submitted for publication)

11. Z. Gaburro, G. Pucker, P. Bellutti, L. Pavesi  
**Electroluminescence in MOS structures with Si/SiO<sub>2</sub> nanometric multilayers**  
Solid state communications 114 (2000) 33.

10. V. Mulloni, R. Chierchia, C. Mazzoleni, G. Pucker, L. Pavesi and P. Bellutti  
**Porous Silicon optical devices and Si/SiO<sub>2</sub> multilayers: recent results**  
(Philosophical Magazine B 80 (2000) 705.

9. F. Rossi, G. Pucker, M. Montagna, M. Ferrari, A. Boukenter  
**Fluorescence Line Narrowing study of Cr<sup>3+</sup> ions in cordierite glass nucleating MgAl<sub>2</sub>O<sub>4</sub> nanocrystals.**  
Optical Materials 13 (2000) 373-379.

8. A. Armellini, M. Ferrari, M. Montagna, G. Pucker, C. Bernard, A. Monteil  
**Terbium(III) doped silica xerogels: effect of aluminium(III) co-doping**  
Journal of Non-Crystalline Solids 245 (1999) 115.

7. C. Duverger, M. Ferrari, C. Mazzoleni, M. Montagna, G. Pucker and S. Turrell  
**Optical Spectroscopy of Pr<sup>3+</sup> Sol-Gel derived SiO<sub>2</sub>-GeO<sub>2</sub> planar waveguides**  
Journal of Non-Crystalline Solids 245 (1999) 129.

6. C. Armellini, L. Del Longo, M. Ferrari, M. Montagna, G. Pucker and P. Sagoo

**Effect of Pr<sup>3+</sup> doping on the densification of silica xerogels**

Journal of Sol-Gel Science and Technology 13 (1998) 599.

5. G. Pucker, S. Parolin, E. Moser, M. Montagna, M. Ferrari and L. Del Longo

**Raman and Luminescence studies of Tb<sup>3+</sup> doped monolithic silica xerogels**

Spectrochimica Acta A Molecular and Biomolecular Spectroscopy, 54 (1998) 2133.

4. K. Gatterer, G. Pucker, W. Jantscher, H.P. Fritzer, and S. Arafa

**Suitability of Nd(III) absorption spectroscopy to probe the glasses from the ternary system Na<sub>2</sub>O-B<sub>2</sub>O<sub>3</sub>-SiO<sub>2</sub>**

Journal of Non-Crystalline Solids 231 (1998) 189-199.

3. K. Gatterer, G. Pucker, and H.P. Fritzer

**Structural informations in the optical spectra of Eu<sup>3+</sup> doped glasses from the ternary system Na<sub>2</sub>O-B<sub>2</sub>O<sub>3</sub>-SiO<sub>2</sub>**

Physics and Chemistry of Glasses 38 (1997) 293-299.

2. G. Pucker, K. Gatterer, H.P. Fritzer, M. Bettinelli and M. Ferrari

**Optical investigation of Eu<sup>3+</sup> in a sodium borosilicate glass: Evidence for two different site distributions**

Physical Review B 53 (1996) 6225.

1. K. Gatterer, G. Pucker, H.P. Fritzer and S. Arafa

**Hypersensitivity and nephelauxetic effect of Nd(III) in sodium borate glasses**

Journal of Non-Crystalline Solids 176 (1994) 237.