

PERSONAL INFORMATION

Georg PUCKER

 pucker@fbk.eu

WORK EXPERIENCE

2011-2022

Senior researcher – Head of Research Unit

Bruno Kessler Foundation (FBK), Trento, Italy

- Head of the Research Unit **Functional Materials and Photonic Structures**, during the years the group performed research in the fields of optical and mechanical coating, materials for energy applications and specialized in recent years especially in the field of integrated optical circuits and quantum optics.
- Within my research in the field of integrated optics an important part is dedicated to the development of integrated circuits with microring resonators as sensing elements for biomedical sensors.

Business or sector: Research

2001 - 2010

Researcher

ICT-IRST (later transformed in Bruno Kessler Foundation), Trento, Italy

- Research on the development and fabrication of high energy particle detectors for the large experiments of AMS (alpha magnetron spectrometer) and ALICE at CERN.
- Research in the field of integrated optics related to optical waveguides and microresonators, and silicon nanocrystal based devices.

Business or sector: Research

Oct. 1996 – Dec. 2000

Postdoctoral Associate

Department of Physics University of Trento

- Research in the field of optical spectroscopy of rare-earth ions in glasses, Development of silicon nanocrystal based light emitting diodes

Business or sector: Research

EDUCATION AND TRAINING

Apr. 1996 – Mar. 1996

Graduated to Doctor of Technical Sciences

Technical University Graz, Austria

- Title of PhD thesis: Optical Investigations of Eu³⁺ and Nd³⁺ doped sodium borate and sodium borosilicate glasses

Oct. 1986 – Mar. 1993

Master Degree in Technical Chemistry

Technical University Graz, Austria

- Title master thesis: Realisation and Optical characterisation of Rare-earth doped borate and silicate glasses

PERSONAL SKILLS

Mother tongue	German
Other language(s)	English (excellent), Italian (excellent)
Job-related skills	<p>Years of experience in optical spectroscopy (transmission, reflectance excitation end florescence at RT and cryogenic temperatures), FTIR - spectroscopy, ellipsometry</p> <p>Vast experience in silicon microfabrication especially in the field of integrated optical circuits and development of optical circuits for biomedical sensing.</p> <p>Experience in collaboration with high tech companies and SMEs in the field of silicon technology, photovoltaics and biomedical sensing.</p> <p>Experience in project management.</p>
Digital skills	Windows, Origin, Peakfit, Maple, Scout (optical properties simulation).
Other skills	<p>Projects and collaborations of relevance for the activities proposed in the spoke:</p> <p>Participation in the project Molecular Diagnostics (collaborational project between Femtoray SRL and FBK) funded by the Autonomous Province of Trento (2020-2022).</p> <p>Participation in the EU FP7 610580 SYMPHONY - "Integrated SYstem based on PHOtonic Microresonators and Microfluidic Components for rapid detection of toxins" (2013-2017).</p> <p>Development of integrated optical circuits for Brillouin spectroscopy, collaboration agreement FBK Crestoptics (2020-2021).</p>

ADDITIONAL INFORMATION

Publications	<p>Publications relevant for the activity proposed within the ecosystem:</p> <p>Chalyan, T., Pasquardini, L., Gandolfi, D., Guider, R., Samusenko, A., Zanetti, M., Pucker, G., Pederzoli, C., Pavesi, L. Aptamer and Fab' Functionalized Microring Resonators for Aflatoxin M1 Detection (2017) IEEE Journal of Selected Topics in Quantum Electronics, 23 (2), art. no. 7565645, pp. 350-357.</p> <p>Samusenko, A., Gandolfi, D., Pucker, G., Chalyan, T., Guider, R., Ghulinyan, M., Pavesi, L. A SiON microring resonator-based platform for biosensing at 850 nm (2016) Journal of Lightwave Technology, 34 (3), art. no. 7384690, pp. 969-977.</p> <p>Ramiro-Manzano, F., Biasi, S., Bernard, M., Mancinelli, M., Chalyan, T., Turri, F., Ghulinyan, M., Borghi, M., Samusenko, A., Gandolfi, D., Guider, R., Trenti, A., Larré, P.-E., Pasquardini, L., Prtjaga, N., Mana, S., Carusotto, I., Pucker, G., Pavesi, L. Microring Resonators and Silicon Photonics (2016) MRS Advances, 1 (48), pp. 3281-3293.</p> <p>Guider, R., Gandolfi, D., Chalyan, T., Pasquardini, L., Samusenko, A., Pederzoli, C., Pucker, G., Pavesi, L. Sensitivity and Limit of Detection of biosensors based on ring resonators (2015) Sensing and Bio-Sensing Research, 6, pp. 99-102.</p> <p>Gandolfi, D., Ramiro-Manzano, F., Rebollo, F.J.A., Ghulinyan, M., Pucker, G., Pavesi, L. Role of edge inclination in an optical microdisk resonator for label-free sensing (2015) Sensors (Switzerland), 15 (3), pp. 4796-4809.</p>
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Il sottoscritto, consapevole che – ai sensi dell'art. 76 del D.P.R. 445/2000 – le dichiarazioni mendaci, la falsità negli atti e l'uso di atti falsi sono puniti ai sensi del codice penale e delle leggi speciali, dichiara che le informazioni rispondono a verità.

Il sottoscritto in merito al trattamento dei dati personali esprime il proprio consenso al trattamento degli stessi nel rispetto delle finalità e modalità di cui al d.lgs. n. 196/2003.

Date: 07/03/2023

Signature: