

François POWOLNY, PhD.

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Age 30, French nationality

PHYSICS ENGINEER

PHOTODETECTION SYSTEMS

COMPETENCIES

Technical:

- Full development of test setups
- Characterization of photodetectors and signal modeling
- Experience in Data acquisition
- Data analysis using Matlab and Mathematica tools
- Presentation of the results in specialized journals and at several conferences
- Supervision of 4 students

Personal profile:

Determined to furnish a high quality work, Integrates easily into a team, Communicates well with all people.

Languages:

French: mother tongue, English: fluent, German: conversational

2005 – 2010: 5 years of professional experience in an international organization, oral presentations and publications in English at several international conferences. Thesis and all reports written in English.

Specialties:

Physics of photodetectors, physics of scintillators, timing mechanisms in detection systems

WORK EXPERIENCE

2009 to present

CERN Fellow

CERN: Physics / CMS group

I developed of a detection system for TOF-PET implementing Silicon Photomultipliers. It resulted in:

- A high improvement of the coincidence time resolution.
- The identification and quantification of the limiting factors.
- Results to be published in IEEE Transactions on Nuclear Science.

September 2005

to December 2008

Doctoral Student

CERN: Physics / Microelectronics group

Development of a new photodetector readout technique for PET and CT detection. Part of the European FP6 project, BioCare (www.biocare-eu.com). Experience in:

- **Physics of Photodetectors:** characterization of APDs, PMTs, MCPs and SiPMs.
- **Electronics:** optimization of front-end electronics, study of the time over threshold technique.
- **Scintillation:** study of the mechanism with a focus on its impact on time precision.
- **Data analysis** using Matlab: characterization of energy and time resolution.
- **Publication** of results in IEEE Transactions on Nuclear Science, Volume 55, Issue 5, Part 1, Oct. 2008 Pages:2465 – 2474.

March to July 2005

Master Internship

CERN : Physics / Microelectronics group

Study of hydrogenated amorphous silicon film properties and characterization of TFA (Thin Film on ASIC) detector technology using this material.

- **Detector characterization:** leakage currents and annealing influence.
- **Publication** of results in Journal of Non-Crystalline Solids Vol. 352 (2006) 1797-1800.

EDUCATION

2006-2008

University of Neuchâtel / CERN

Doctoral student – European Organization for Nuclear Research (**CERN**), Switzerland

Doctoral institute: Institute of MicroTechnology (**IMT**) Neuchâtel

PhD. Thesis «*Characterization of time resolved photodetector systems for Positron Emission Tomography*» available at: <http://doc.rero.ch/record/12683?ln=de>.

2003-2005

INSA Rennes

Engineer **INSA Rennes** (France), Specialization in **Nanotechnologies and Materials**.

Microelectronics, optoelectronics and magnetic properties of solids - semiconductor devices

Master 2 in physics, specialization in physics and interfaces

HOBBIES

15 years of practicing Water Polo in a club, coach of the “Carouge Natation” leisure team from 2007 to present, organization of holidays for children, music: 6 years playing violin, reading to relax.