

# Peter Sprenger

## Curriculum Vitae



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### Professional Experience

- 2017 – present: **Lead Magnetic Resonance, University of Waterloo, Canada**
- Research and development of quantum sensors and actuator using Magnetic Resonance
  - Supporting students and staff in experimental setups
  - Managing the electronic and instrumentation lab
- 2015 – 2017: **Managing Director, Kruthwong & Sprenger, Bangkok, Singapore**
- Startup and operation of Kruthwong & Sprenger Pte.Ltd.
  - Promotion of Innovation, Science and Technology
  - Representing High Tech Enterprises in Southeast Asia
- 2015 – 2017: **Consultant, JEOL Asia Pte. Ltd., Singapore**
- Promotion of Analytical Instruments for Jeol Asia
  - Presentations at scientific conferences
  - Introduction at government bodies and academia in SEA
- 2013 – 2017: **Director, Member of the Board, Swiss Thai Chamber of Commerce, Bangkok, Thailand**
- Director of newsletter published on [swissthai.com](http://swissthai.com)
  - Representing Swiss business community at conferences and events
  - Promoting Swiss business interests in Thailand
- 2013 – 2015: **Consultant, Light Energy Systems, Balzers, Lichtenstein**
- Promotion of foldable PV carrier, UrbanPlant
  - Presentations at conferences and solar workshops in Thailand
- 1995 – 2015: **General Manager, Bruker South East Asia, Bangkok**
- Startup and operation of Bruker South East Asia
  - Startup of Bruker Singapore Pte. Ltd, 1998, Position: Managing Director
  - Startup of Bruker Malaysia Sdn Bhd, 2001, Position: Managing Director
  - Startup of Bruker Indonesia, 2008, Position: Managing Director
  - Startup of Bruker Vietnam, 2012, Position: Managing Director
- 1991 - 1993: **Research and Development Engineer, Bruker Instruments, Billerica MA, United States**
- State of the art RF detectors
  - Magnetic field compensation control systems

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| 1990 - 1991: | <b>Analytical Systems Engineer, Bruker Biospin AG, Zurich, Switzerland</b> <ul style="list-style-type: none"> <li>• International customer support of NMR spectrometers</li> <li>• Coaching and training of NMR engineers</li> </ul>             |
| 1983 - 1986: | <b>Digital Systems Technician, Bruker Biospin AG, Zurich, Switzerland</b> <ul style="list-style-type: none"> <li>• International customer support of computer and disk systems</li> <li>• Coaching and training of computer engineers</li> </ul> |

## Education

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| 1993 - 1995: | <b><u>Massachusetts Institute of Technology (MIT), Cambridge, MA, United States</u></b> <ul style="list-style-type: none"> <li>• Master of Science (MSc) in Electrical Engineering and Computer Science</li> <li>• Master of Science (MSc) in Nuclear Engineering</li> <li>• Thesis: Resonator Design in MRI</li> <li>• Scholarships: Bruker (2 years), Mass.Gen.Hospital (1 year), MIT (1 year)</li> </ul> |
| 1986 - 1989: | <b><u>Technical University, Rapperswil, Switzerland</u></b> <ul style="list-style-type: none"> <li>• Bachelor of Science (BSc) in Electrical Engineering and Computer Science (El.Ing, HTL)</li> <li>• Thesis: Digital Control System of 4th order plant</li> <li>• Industrial Prize awarded</li> <li>• Scholarships: Bruker (3 years), Canton St.Gallen (3 years)</li> </ul>                               |
| 1979 – 1983: | <b>Siemens Transportation Systems, Wil, Switzerland</b> <ul style="list-style-type: none"> <li>• Berufsslehre (Appreticeship) Elektroniker (Electronic Technician)</li> <li>• Developing, assembling, testing electronic devices for public transportation control systems</li> </ul>   |

## Patents and Publications

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| US patent<br>5,343,151:                 | <u>Automated adjustment of magnetic field inhomogeneity.</u>  |
| Poster SMRI 1994:                       | Gradient Birdcage Resonator Design  |
| Thesis MIT, 1995:                       | <u>Resonator Design in MRI</u>  |
| Anal.Chem. 77,<br>2005, 1655-1662:      | <u>2D Band Target Entropy Minimization 2D Nuclear Magnetic Resonance</u>  |
| Polym. Eng. Sci.46,<br>2006, 1684-1690: | <u>Solid State <sup>19</sup>F NMR Study of Crystal Transformation in PVDF and its Nanocomposites</u>  |
| Analytica Chimica<br>Acta, 2008, 48-55: | <u>A combination of spectral re-alignment and BTEM for the estimation of pure component NMR spectra from multicomponent non-reactive and reactive systems</u> |
| Quantum Eng.Vol 1,<br>Issue 4 Dec 2019: | <u>Overcoming synthesizer phase noise in quantum sensing</u>  |

## Community

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| 2012 - 2017: | Matura (Swiss High School Diploma) expert at the <u>Swiss School Bangkok</u> (elected by Kt. Luzern) for Chemistry, Mathematics and Physics. |
| 2013 - 2017: | Board Member <u>Swiss School Bangkok</u>   |

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| 2008 - 2017:       | Part Time lecturer for Analytical Technology at the <u>Chulabhorn Research Institute</u> , Graduate School, Bangkok.  |
| <b>Skills:</b>     | Programming: C, Python, Matlab, Mathematica, Java(Script), HTML, CSS<br>CAD: Onshape, KiCad, Spice<br>IT: MS-Office, Salesforce, Google<br>Hands-on: Lathe, Mill, Drill |
| <b>Languages:</b>  | German, English, Thai   |
| <b>References:</b> | upon request  |
| <b>Hobbies:</b>    | Reading, Science, Family, Football, Hiking, Boating, Skiing, Renewable Energy, Solar Rooftop  |
| <b>Personal:</b>   | Date of Birth: 16. July 1963<br>Swiss, Married, PR Thailand<br>Children: Natalie 19, Denis 20, Andre 21   |