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Udi Wengrowicz - Curriculum Vitae

NRCN, POB 9001, Beer Sheva 84190, ISRAEL

Personal Details

Name: Udi Wengrowicz

Electronic and Control Division, NRCN, POB 9001, Beer Sheva 84190, Israel

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Academic Education

1980 – 1985: B.Sc. in Electrical and Computer Engineering, Department of Electrical and Computer Engineering, Ben-Gurion University of the Negev, Beer Sheva, Israel.

1995 – 1999: M.Sc. in Nuclear Engineering, Department of Nuclear Engineering, Ben-Gurion University of the Negev, Beer Sheva, Israel.

2016 - Present: Study for Ph.D. degree in Nuclear Engineering (PhD thesis presented for review), Department of Nuclear Engineering, Ben-Gurion University of the Negev, Beer Sheva, Israel.

Employment

2009 - Present: NRCN, Electronic and Control Division, Senior Engineer and R&D manager of detectors and technologies for radiation measurement.

Duties: Leading research of innovative radiation detectors. R&D engineers Supervisor.

2008 - 2009: Inversa Systems Ltd., UNB (University of New Brunswick), NB, Canada. Sabbatical R&D Engineer.

Duties: Front End Electronics, Embedded Software and Gamma Detectors R&D for DBT – Deep Backscatter Tomography.

2006 - 2008: NRCN, Electronic and Control Division, Head of the Electronics Development Department. Senior Electronics and Health Physics design engineer.
Duties: Management, supervision and guidance of a group of instrumentation and system design engineers and technicians.

1992 - 2005: R&D Engineering and project leader for development of health physics, safety and medical measurement instrumentation, Electronics Development Dept. NRCN.
Duties: R&D of radiation measurement instrumentation.

1999-2000: Sabbatical at the Department of Nuclear Engineering, Ben-Gurion University-Negev, Beer-Sheva.

1986-1992: Electronics R&D engineer, Electronics department of the NRCN.

Main Research Interest

1. Scintillators, PMTs and SiPMs for neutron and gamma instrumentation for Home-Land Security applications.
2. Solid State Detectors for X and Gamma Rays
3. Ion chambers and Proportional counters for neutron detection
4. Charged particles, Gamma and Neutron detection instrumentation.
5. Algorithms and real time software for measurement of ionizing radiation.
6. Pulse processing and front-end electronics.
7. Detectors and Processing systems for Industrial Deep Backscatter Tomography

Thesis and Thesis Supervising and Advising

1. **Development of a new generation of portable gamma radiation detection system**
   U. Wengrowicz (Author), G. Shani (Supervisor), MSc thesis, Department of Nuclear Engineering, Faculty of Engineering, Ben-Gurion University of the Negev, April 2000

2. **Afterglow Effect in γ-Ray scintillation crystals**
   Y. Ifargan (Author), U. Wengrowicz (Supervisor), Z.B. Alfassi (Supervisor), MSc thesis, Department of Nuclear Engineering, Faculty of Engineering, Ben-Gurion University of the Negev, April 2009

3. **Detection Unit Optimization of a Neutron Searching Detector using Monte Carlo Simulations**
   S. Korotkin (Author), U. Wengrowicz (Advisor), I. Orion (Supervisor), MSc thesis, Department of Nuclear Engineering, Faculty of Engineering, Ben-Gurion University of the Negev, Sep. 2009.

4. **Comparison between Boron-Carbide coated thermal neutron detectors and other detection technologies applicable to Homeland Security**
   Yuval Ben Galim (Author), I. Orion, A. Raveh (Supervisors), U. Wengrowicz (Consultant), MSc thesis, Department of Nuclear Engineering, Faculty of Engineering, Ben-Gurion University of the Negev, June 2014.

5. **Research and Optimization of Detectors of Alpha & Beta Contamination**
   Dudy Amidan (Author), U. Wengrowicz (Supervisor), I. Orion (Supervisor), MSc thesis, Department of Nuclear Engineering, Faculty of Engineering, Ben-Gurion University of the Negev, April 2016.

6. **Research of physical processes in proportional detectors for neutron detection (**presented for review)
   U. Wengrowicz (Author), A. Raveh, I. Orion (Supervisors) Ph.D. thesis, Department of Nuclear Engineering, Faculty of Engineering, Ben-Gurion University of the Negev

Selected List of Publications

1. **Radiodine Monitoring System – "RIS-125"**
   Y. Mazor, U. Wengrowicz, E. Dolev, H. Assido, D. Tirosh, S. Levinson, I. Belaish, T. Kravchick, U. German, and O. Peled
   European Journal of Nuclear Medicine, Volume 26, Number 9, 1999, pp1190, PS-551

2. **Innovative Portable Radiation Monitoring System**
   U. Wengrowicz, T. Mazor, M. Cahana, E. Dolev, R. Gihon, Y. Kadmon, M. Ellenbogen and D. Tirosh
   IRPA 10, The 10th International Congress of the International Radiation Protection Association, Programme & Abstracts, May 14 – 19, 2000 Hiroshima, Japan, pp 215, P-3b-213.

3. **A Continuous Air Monitoring Sampler for 125I – "RIS-125"**
   S. Levinson, I. Belaish, T. Kravchik, U. German, O. Pelled, Y. Mazor, U. Wengrowicz, E. Dolev, H. Assido, D. Tirosh, Y. Laichter.
   IRPA 10, The 10th International Congress of the International Radiation Protection Association, Programme & Abstracts, May 14 – 19, 2000 Hiroshima, Japan, pp 86, P-3a-149.

4. **Scintillation Light Readout Using Silicon Photomultiplier-Review of Experimental Results**
   A. Osovizky, U. Wengrowicz, M. Ghelman, I. Cohenzada, V. Pushkarsky, D. Ginzburg, Y. Gabay, A. Algom, R. Seief, A. Manor, A. Beck, E. Vulaski, M. Ellenbogen, D. Tirosh, Nuclear Science Symposium-Medical Imaging Conference, Dresden-Germany, 19-25 October 2008, Abstract and poster presentation, IEEE 2008 NSS-MIC Abstract Book, N30-358, pp217

5. **On the Elimination of Afterglow of CsI(Tl) Scintillation Detector**
   Z.B. Alfassi, Y. Ifargan, U. Wengrowicz, M. Weinstein, Nuclear Instrumentation and Methods in Physics Research A606 (2009), pp585-588

6. **Improving the Detection Performances of Radiation Portal Monitors Using Matched Filter Algorithm**
   M. Ghelman, A. Osovizky, E. Marcus, D. Ginzburg, E. Gonen, R. Seief, B. Ashkenazi, U. Wengrowicz, Y. Kadmon, Y. Cohen, International Symposium on Nuclear Safety, Book of Extended Synopses, Vienna-Austria, 30 March- 3 April 2009, Synopse and poster presentation, IAEA CN-166, pp134

7. **Detection unit optimization of a neutron searching detector using Monte Carlo Simulations**
   S. Korotkin, U. Wengrowicz, I. Orion, Nuclear Instrumentation and Methods in Physics Research A660 (2011), pp154-161

8. **Time dependent measurements of induced fission for SNM interrogation**
   A.Beck, I. Israelashvilli, U. Wengrowicz, E.N. Caspi, A. Osovizky, A. Ocherashvilli, H. Rennhofer, B. Pedersen, J-M. Crochemore, E. Roesgen.
   Jinst-Journal of Instrumentation, 08/2013, 8(08):p08011

9. **Gamma scintillator system using boron carbide for neutron detection**, Y. Ben-Galim, U. Wengrowicz, A. Raveh, and I. Orion, Nuclear Instrumentation and Methods in Physics Research, A756 (2014), 62–67.

10. **Measurement of Doppler Broadened line from the $^{10}B(n,\alpha)^{7}Li$ interaction in HPGe detector as a tool for thermal neutron detection**, Y. Ben-Galim, U. Wengrowicz, R. Moreh, I. Orion, and A. Raveh, Nuclear Instruments and Methods in Physics Research A810 (2016) 140-143.(Y. Ben-Galim and U. Wengrowicz contributed equally to this work).

11. **Alpha beta monitoring system based on a pair of simultaneous multi wire proportional counters**, U. Wengrowicz, D. Amidan, and I. Orion, Nuclear Instrumentation and Methods in Physics Research A827 (2016), pp118-123

12. **Neutron detection probe based on Li-Glass scintillator and an array of SiPM,** U.Wengrowicz, A. Ocharshvily, Y. Ifergan, I. Dahan, Y. Kadmon, D. Ginzburg, A. Raveh, A. Osovitzky, E. Volasky, I. Orion, International Atomic Energy Association (IAEA), 2nd Technical Meeting on Radiation Detection Instruments for Nuclear Security: Trends, Challenges and Opportunities, Abstract ID-23, April 2018, Vienna-Austria.

13. **Neutron Detector and Method for its Preparation**, Beck Arie, Wengrowicz Udi, Tiferet Eitan, Raveh Avi, Chonin Michael, Orion Itzhak, International Application Published under the Patent Cooperation Treaty (PCT), WO 2018/033908 AI, 22 Feb. 2018.
    Patent Application Publication, US 2020/0025956 A1, Jan 2020.

14. **Neutron Detection Module based on Li-Glass scintillator and array of SiPMs.** Udi Wengrowicz, Alon Osovizky, Aaron Ocherashvili, Dimitry Ginzburg, Yair Ifergan, Eli Volasky, Yagil Kadmon, Avi Raveh, Itzhak Orion, IEEE transaction on Nuclear Science, TNS-00547-2019, On Feb.2020 was approved for publication in a future issue.