

The 2025 Erwin Marx Award was announced on the 2025 Pulsed power conference web site

<https://www.ppps2025.kit.edu/95.php#block252>

The talk and award are described below:



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Richard Adler

Marx Award Winner

“A random walk through pulsed power and HV generator design with comments on pulsed power in small business and the application and advantages of resonant circuits”

Thursday 08:30, Convention Hall 1 Room A

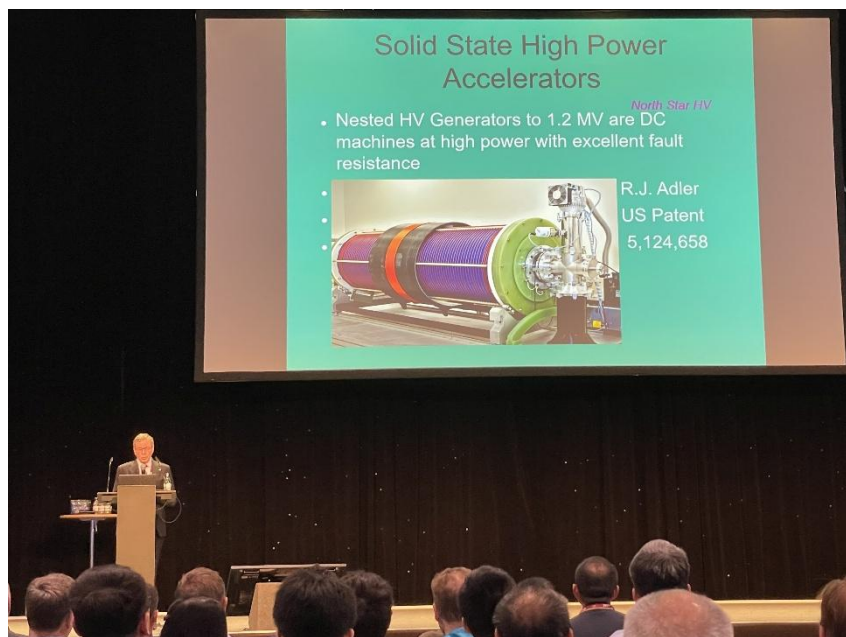
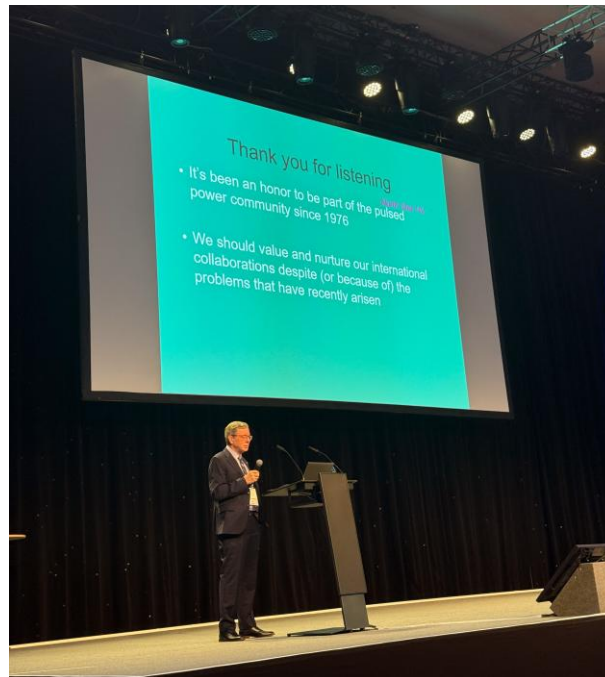


Dr. Richard Adler is the President and founder of North Star High Voltage, and previously the co-founder of North Star Research (with R. Richter-Sand). Dr. Adler graduated with a BSc in Physics from the University of Alberta in 1976, and subsequently graduated with a PhD in Electrical Engineering from Cornell University in 1980. He has spent almost all of his career in small business starting with 5 years at Mission Research. This was followed by 2 years at Pulse Sciences Inc (Los Angeles) and for a short period at Titan/PSI. North Star Research (Albuquerque) was founded in 1987 and Dr. Adler was co-owner and president from 1987 until 2004 when the company was acquired by Applied Energetics. Dr. Adler worked at Applied Energetics/North Star Power Engineering from 2004-2012 followed by a year working in the US and UK at e2V. In 2014, Dr. Adler has since worked full time as president/chief technical officer of North Star High Voltage which primarily makes HV probes, dividers and HV support equipment with some pulse generator design work.

Dr. Adler has concentrated on pulsed power systems and measurements to satisfy the highly varied requirements of 100s of customers over the years. Dr. Adler has 23 patents and 63 Archival publications. He is also the editor and co-author of the well-known pulsed power formulary. His experience has ranged from originating the popular cloth fiber cathode for electron emission in 1982, to the development of a wide range of HV measurement devices over the period from 1996 – 2025. He designed and supervised the construction of machines ranging from the first magnetically insulated line microwave source to X-ray cargo inspection systems based on electron beam scanning to counter-IED devices fielded in Afghanistan, to HV probes from 10 kV to 400 kV. Over 10,000 HV measurement devices have been delivered to customers. In that span Dr. Adler has also design literally 100s of pulsed power generators and HV accelerators built for customers.

Abstract: Much like a small hardware business, this talk walks through a variety of disparate subjects. A small businessman's activities are dominated by the interests and requirements of customers. In this talk, Dr Adler will comment on some of the important technical, and non-technical requirements for the operators of a small hardware business delivering fixed price hardware. The second topic will be the use of solid-state air core resonant transformers, resonant circuits and air core transformers to design and build pulse generators and accelerators with unique properties. Examples will include the "Nested High Voltage Generator" which Dr Adler invented in 1985, the 700 kV Solid state Arbitrary Waveform Generator (AWG) used for laser guided Energy physics research, and the Banshee pulsed power device successfully fielded to pre-detonate IEDs. As a final topic, time permitting Dr Adler will discuss the trade-offs and capabilities of the HV probes and dividers presently developed and under development.

Award plenary talk



Award presentation by Jacob Stevens and Georg Muller



Karen and Richard Adler After Party

