Don Tan Bio (299 Words)

Dr. Tan is Fellow and Power Products Manager with NGAS. He earned his Ph.D. from California Institute of Technology and is IEEE Fellow.

"A renowned world expert" in power electronics and energy systems, he is also known for his dual industry and academia careers as a chief technologist and a guest professor. He, together with his colleagues, has achieved many high-impact industry firsts with unparalleled performances, including resilient dc macro-grid, adiabatic power with record efficiency, highest precision pointing accuracy, lowest temperature cryogenic cooling for ultra low noise instrument, and highest beam quality in laser. He is a frequent keynote speaker and the principal author for more than 100 papers and presentations. His research has attracted more than $30M funding.

His recent recognitions include NGAS Engineering Choice Award for Innovation (2103, second place), NGAS Distinguished Engineer (2011), CIE USA Asian American Engineer of the Year Award (2010), AIAA Space System Award (2008), JANNAF Outstanding Achievement Award in Spacecraft Propulsion (2007), and NGST Distinguished Patent Award and President's Award for Innovation (both in 2002). His double forward technology was licensed to a major telecommunications company.

He has been providing many IEEE and PELS leadership and services, including Member of the IEEE Board of Directors (2017- 2018), Division II Director-Elect (2016), PELS Nomination Committee Chair (2015 – 2016), EiC (founding) of IEEE Journal of Emerging and Selected Topics in Power Electronics (2013 – present), PELS President (2013 – 2014), PELS Vice President for Operations (2009 – 2012), Guest EiC, IEEE Transactions on Power Electronics (2011), Guest EiC IEEE Transactions on Industry Applications (2012), Member of IEE PELS Fellow Committee (2010 – 2013), PELS AdCom Member at Large (2005 – 2009), PELS Vice President for Meetings (2001 – 2004), and Associated Editor for IEEE Transactions on Power Electronics (1996 – 2000).

Keynote: Six (6) Basic Characteristics of a Modern Grid (98 Words)

Abstract: Grid modernization requires a win-win-win approach for the environment, consumers, and grid owners. Electronictization will provide a foundation for active control and intelligence. The grid will have fractal architecture in order to be infinitely expandable. Structured microgrids will naturally integrate the renewables with storage to provide autonomous energy balance and control. Grid's ability for fault isolation localizes any failure to minimize its impact. Built-in fault and redundancy management can enable self resiliency – to autonomously recover from natural or man-made disasters. And the back-to-back dc-dc will enable asynchronous generation to significantly enhance grid robustness while reducing grid operational cost.