

Commercial Applications for RF MEMS

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Abstract

Radio frequency micro-electro-mechanical systems (RF MEMS) have been heralded as a technology fit for the 21st century, offering unsurpassed RF performance over more conventional solid-state electronic devices. In recent years, this technology has seen a rapid rate of expansion because of its potential for advancing new products within a broad range of applications; from ubiquitous smart sensor networks to mobile handsets. Indeed, within the US, Asia and Europe, R&D is almost at fever pitch. The high levels of investment come second only to the expectations for commercial exploitation. The first RF MEMS device was reported 30 years ago by IBM. After experiencing the peak of inflated expectation in 2003 and subsequent trough of disillusionment in 2005, RF MEMS switches have emerged into the slope of enlightenment. They are now commercially available on the open market, offering new solutions for realizing high performance reconfigurable microwave circuits and systems. A major new book, entitled *Advanced RF MEMS* (edited by the speaker), is scheduled for publication at the beginning of 2010. This lecture will explain the many facets of this technology and demonstrate how RF MEMS can move itself out of the laboratory and into real commercial applications.

Biography

Stepan Lucyszyn PhD, DSc, FIEE, FInstP, FEMA, SMIEEE is currently a Reader (Associate Professor) in Millimetre-wave Electronics at Imperial College London.

For the first 12 years of his research career he worked on microwave and millimetre-wave RFIC/MMICs. During the following 9 years, Dr Lucyszyn worked on RF MEMS. Dr Lucyszyn has (co-)authored 125 technical papers in applied physics and engineering, and presented many invited lectures at international conferences and workshops. In 2009 he was appointed an IEEE Distinguished Microwave Lecturer for 2010-2012. In 2010 he received a DSc (Higher Doctorate) degree in Millimetre-Wave and Terahertz Electronics from Imperial College London. In Oct. 2011, he will Chair the European Microwave Conference in Manchester (UK).

