

Special Issue

Micro-Machined Thin-Film Piezoelectric Sensors

Message from the Guest Editor

Historically, piezoelectricity has always been one of the preferred transduction mechanisms in electromechanical sensors at a macro-scale, because of the possibility of achieving significantly higher coupling efficiency in piezoelectric transducers compared to alternatives such as capacitive transducers. However, with the emergence of micro-machined sensors, capacitive transduction became the main mechanism of choice, as the integration of a suitable piezoelectric material into the microfabrication foundries turned out to be extremely complicated, and in many instances impossible. This trend started to change in the early 21st century, once a reliable deposition of high-quality piezoelectric AlN on silicon substrates was demonstrated through the sputtering process. Since then, other thin-film piezoelectric materials have been explored, and the commercial application of piezoelectric transduction for sensing has increased significantly, and this trend is expected to continue. In this Special Issue, we focus on the recent advances in the field of thin-film piezoelectric sensors.

Guest Editor

Dr. Reza Abdolvand

Harris Corp. Engineering Center (HEC), University of Central Florida,
4000 Central Florida Blvd. Orlando, FL 32816, USA

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Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
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Editor-in-Chief

Prof. Dr. Vittorio M. N. Passaro
Department of Electrical and Information Engineering, Politecnico di Bari, Via Orabona 4, 70126 Bari, Italy

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