

Special Issue

Semiconductor Packaging for the Age of Digitalization: New Materials, Technologies and Processes

Message from the Guest Editor

We are continuously observing new challenges in microelectronic packaging. Major trends like the Internet of Things, digitalization, and the application of Artificial Intelligence (AI) drive new requirements for hardware: new chip and system architecture, an increasing number of electric interconnects, low power consumption and miniaturization. In addition, autonomous intelligent systems such as self-driving cars will cause new challenges for functional safety, reliability, and lifetime prediction in the field of electronic devices. Cost-efficient methods for condition monitoring needs to be integrated on package level and realized on system level. Another major trend is the transition of energy supply and electrification, which affects microelectronic packaging. Power electronics, e.g., converters and electromobility, enable, in combination with wide gap semiconductors, high operation temperature under severe environmental conditions which are demanding for electronic materials. The upcoming age of digitalization and Artificial Intelligence will be based on the hardware—based on new material, technologies, and packaging processes.

Guest Editor

Prof. Dr. Gordon Elger

Faculty of Electrical Engineering and Information Technology,
Technische Hochschule Ingolstadt (THI), Ingolstadt, Germany

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Materials
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
materials@mdpi.com

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Message from the Editor-in-Chief

Materials (ISSN 1996-1944) was launched in 2008. The journal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites, advanced materials characterization, porous materials, manufacturing processes and systems, advanced nanomaterials and nanotechnology, smart materials, thin films and interfaces, catalytic materials, carbon materials, materials chemistry, materials physics, optics and photonics, corrosion, construction and building materials, materials simulation and design, electronic materials, advanced and functional ceramics and glasses, metals and alloys, soft matter, polymeric materials, quantum materials, mechanics of materials, green materials, general. *Materials* provides a unique opportunity to contribute high quality articles and to take advantage of its large readership.

Editor-in-Chief

Prof. Dr. Maryam Tabrizian

1. Department of Biomedical Engineering, Faculty of Medicine and Health Sciences, McGill University, Montreal, QC H3A 2B6, Canada
2. Faculty of Dentistry and Oral Health Sciences, McGill University, 3640 Rue University, Montreal, QC H3A 0C7, Canada

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