Special Issue

Environmentally Friendly Solders

Message from the Guest Editor

Electronic interconnects (so-called soldering technology) serve both electronic and mechanical functions between the electronic components and the printed circuit boards (PCBs) in electronic devices. Thus, the importance of soldering in electronic packaging is increasing due to the rapid growth of the electronic industry in recent years. Traditionally, lead-containing alloys, (Sn–Pb solders), are used for interconnections in electronic components due to their unique combination properties and low cost. However, environmental and health concerns over the toxicity of lead combined with strict legislation to ban the use of lead-based solders have led to the development of lead-free solder alloys. Nowadays, several types of environmentally friendly solders have been introduced. However, with the advancement of micro/nanosystems technology toward higher speed, smaller, thinner and portable features, an increasing quest for better performance, miniaturization and reliability, the industry is facing severe limitations. Therefore, there is a critical challenge to introduce a highly reliable solder alloy that will enhance the reliability and longevity of modern electronic devices.

Guest Editor

Dr. Asit Kumar Gain

Department of Mechanics and Aerospace Engineering, Southern University of Science and Technology, Shenzhen 518055, China

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

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Metallic materials play a vital role in the economic life of modern societies; contributions are sought on fresh developments that enhance our understanding of the fundamental aspects related to the relationships between processing, properties and microstructure – disciplines in the metallurgical field ranging from processing, mechanical behavior, phase transitions and microstructural evolution, nanostructures, as well as unique metallic properties – inspire general and scholarly interest among the scientific community.

Editor-in-Chief

Prof. Dr. Yong Zhang
Beijing Advanced Innovation Center of Materials Genome Engineering, State Key Laboratory for Advanced Metals and Materials, University of Science and Technology Beijing, 30 Xueyuan Road, Beijing 100083, China

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