

Special Issue

Microwave Plasma Processing of Materials

Message from the Guest Editors

This Special Issue will gather contributions from the 16th AMPERE conference in Delft (2017), centered on microwave plasmas, involving both the processing of materials and new plasma sources. The advantage of using microwaves for plasma generation lies in the higher degrees of ionization and dissociation that can be obtained, compared to other types of electrical excitation. This can be used proficiently to reduce activation energy and to enhance reaction kinetics. Moreover, compared to conventional thermal plasmas or standard thermal reactions, lower temperatures can be achieved, with important consequences on the energy efficiency and yield of processes, as well as on the microstructure of resulting products. The topic of microwave plasmas is an interdisciplinary one, which includes fields of science, engineering, and technology, with important contributions from chemistry, physics, materials science and microwave technology. The latter becomes more and more relevant when considering the advent of new high-power microwave solid-state generators, implementing new control strategies to further optimize plasma generation, both in continuous or pulsed mode.

Guest Editors

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