Special Issue

Metal–Semiconductor Interfaces for Etching, Sensing, Catalysis, and Other Cutting-Edge Technologies

Message from the Guest Editor

Metal–semiconductor interfaces are crucial for different very relevant applications like etching, sensing, and catalysis due to their ability to control electron and hole transfe. Being able to tune the characteristics of the interfaces makes them highly versatile for the development of the cited applications, and other cutting-edge technologies. In the case of metal-assisted chemical etching (MACE), the metal acts as a catalyst to generate electronic holes, and also forms a junction with the semiconductor to be etched, injecting the holes into it, producing etching. The nature of the metal–semiconductor interface greatly influences the size, shape, and porosity of etched structures. Metal–semiconductor interfaces are also the most important part of different optical and electrical sensors. In photocatalysis, metal–semiconductor interfaces are important for charge separation and transfer, being needed for driving chemical reactions. The Special Issue includes the following: metal-assisted chemical etching; stain etching; Schottky junction devices; chemical and electrochemical sensors; SERS; composite catalysts; other metal–semiconductor-based devices and applications.

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