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Functional Inks: Formulation, Characterization and Printing Techniques

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Deadline for manuscript submissions:
closed (10 March 2023)

Message from the Guest Editor

Printed electronics are being used nowadays in many commercial applications, such as photovoltaic solar bus bars, glucose test strips, force sensors, touch screen electrodes, membrane circuits, and heating elements. These devices have been dominated by metal and metal-oxide-semiconductors, which present difficulties regarding the design of transparent and flexible electronics, heat management, and rapid device customization. Because of their unique structural features and outstanding properties. Very recently, new water-based and high-concentration inks formulated with 2D materials, including conductors, semiconductors, and insulators, have been reported in the literature. The current situation is paradoxical—the rheological properties are improved by adding chemicals that are to the detriment of the electro/mechanic/optical properties required by printed electronics. Thus, the right combination of formulation for the inks, the rheological behaviour, and the selected printing technique is of paramount importance in order to ensure printability and functionality.

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Journal Rank: JCR - Q2 (*Metallurgy & Metallurgical Engineering*) / CiteScore - Q2 (*Condensed Matter Physics*)

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