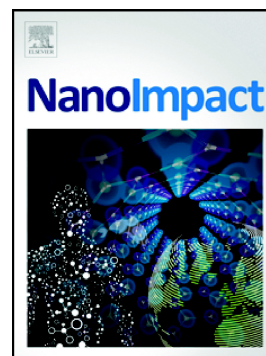


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ABSTRACT

There is a growing need to develop and characterize reference metal and metal oxide engineered nanomaterials (ENMs) of high purity and tunable intrinsic properties suitable for nanotoxicology research. Here a high throughput (volume) and precision flame spray pyrolysis (FSP) approach coupled with state-of-the-art characterization techniques are utilized to generate such reference ENMs. The lab-based and industrially relevant FSP system, termed as Versatile Engineered Nanomaterials Generation System (VENGES), synthesizes the metals and metal oxides, at high throughput manner with controlled properties, such as primary particle size, aggregate diameter, shape, crystallinity, stoichiometry and surface chemistry. A nanopanel of nine reference ENMs (silica, silver, silver supported on silica, alumina, ceria and iron oxide)

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