



## Advances in Preparation and Characterization of Nanocrystalline Diamonds and Their Applications

Guest Editor:

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### Message from the Guest Editor

Dear Colleagues,

Diamond is an allotrope of carbon and has attracted much researcher attention due to its physical and chemical properties. Nanocrystalline diamond is a type of carbon material, typically formed via the chemical vapor deposition (CVD) method, which displays outstanding properties, such as low self-friction coefficient, high wear and corrosion resistance, super hardness, bio-tolerance, and high thermal conductivity. Therefore, nanocrystalline diamond has great potential applications in cutting tools, mechanical seals, biomaterials, sensors, and thermal spread substrates.

Recent evidence has indicated that the properties of nanocrystalline diamond are related to its grain size. Hence, it is important to develop new preparation approaches to obtain diamond products with about 5 nm or lower grain size. This finding introduces a significant challenge for researchers to develop new machining and characterization methods.

In this Special Issue, recent advances in nanocrystalline diamonds, including bulk material or thin film preparation, machining, characterization, and applications, will be highlighted and discussed.

Prof. Dr. He Li  
*Guest Editor*





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## Message from the Editor-in-Chief

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