

عنوان مقاله:

Morphological Characterization of Nano- Structure Plasma-assisted Pyrolyzed ZIF-67

محل انتشار:

سومین همایش بین المللی تحقیقات در علوم و فناوری نانو (سال: 1402)

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خلاصه مقاله:

the high-temperature step required in the carbonization of organic precursors frequently impacts the distribution of the active phase, especially when high loadings are predicted. Metal-organic frameworks (MOFs) are a class of promising porous crystalline inorganic-organic hybrid materials that have appeared as one of the most rapidly developing fields in materials science and chemistry over the last two decades. MOFs have recently been presented as remarkable precursors in synthesizing amazingly distributed Co and Fe nanoparticles with fascinating performance in terms of activity, reactivity, and stability to solve the drawbacks of previous technologies. Because of its intriguing properties, nitrogen-rich ZIF-67 is one of the most commonly used MOFs in this context. When pyrolyzed in an inert atmosphere, they produce carbon-encapsulated cobalt nanoparticles that inhibit the formation of larger agglomerates, favouring cobalt particle dispersion. Furthermore, when the pyrolysis conditions are optimized, the reducibility of cobalt nanoparticles can be increased even further. In the presented research, morphological characterization of plasma-assisted pyrolyzed ZIF-67 will be taken in to account

کلمات کلیدی:

zeolite imidazole framework(ZIF-67), Plasma, Morphology, carbonization

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