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Bi2212 precursor powder and Bi2212 wires synthesized based on nanospray combustion technology

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Nanospray combustion technology is an attractive way to make Bi2212 precursor powder for both its time-saving process and its good property in powder as well as in wires made by the powder. By adjusting the related parameters of nanospray combustion technology, mainly including the concentration of the Bi2212 precursor liquid, the flow rate of the carrier gas and the combustion temperature, we had synthesized Bi2212 precursor powder. By optimizing the related parameters, Bi2212 precursor powder with smaller particle size, good compositional uniformity and phase purity was obtained. Preliminary results showed Bi2212 wires synthesized based on this powder held a nearly equivalent I_c with the wires made based on the co-precipitation powder. It's believed that wires with improved performance would be obtained by using the precursor powder synthesized by the nanospray combustion technology in the near future.

Keywords: Nanospray combustion technology, Bi2212 precursor powder, Bi2212 wires