

## The Effect of Metal Ion on the Fluorescence Behavior of Carbon Dots

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There has been a growing interest in developing fluorescent nanoparticles due to their biocompatibility, low-cost, and unique optical properties. Among various fluorescent nanoparticles, carbon dots (CDs) have great potential in bio-medicine, electrocatalyst, and sensors. Fluorescence behavior including quantum yield (QY) is one of key factors that determines the application of CDs. One of popular approaches to improve QY of CDs is based on the addition of metal ion by modulating sp<sup>2</sup> domains and band gap, thus controlling fluorescence behavior. In this study, cobalt ion was added during the synthesis of CDs. By the addition of cobalt ions, fluorescence emission and QY of CDs were improved. Furthermore, we have successfully dispersed CDs into hydrophobic elastomer matrix, and strong fluorescence was observed from the CDs-incorporated elastomer matrix.