

Abstract Submitted
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Shedding Light on the Formation of Gold Nanorods¹ ORLANDO LOPEZ, Brookhaven National Laboratory, DAMIEN HUDRY, Brown University, DMYTRO NYKYPANCHUK, Brookhaven National Laboratory — A significant interest in the study and synthesis of one-dimensional materials such as nanorods or nanowires is sparked by their potential application in electronics, photonics and biodetection. However, the synthesis of these low dimensional materials is not always reliable due to kinetic effects in symmetry breaking and high sensitivity to impurities. In this work we discuss the synthesis of gold nanorods and new ways to achieve symmetry breaking during the growth from seed solution, hence maximizing the yield of nanorods. We discuss the mechanism involved in symmetry breaking and general strategies to improve the nanorod morphology and synthetic yield. This work can serve as a starting point to design reproducible synthetic strategies for preparing high quality gold nanorods.

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