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Directed Assembly of Gold Nanoparticles via Polymer Single Crystals SHAN MEI, HAO QI, TIAN ZHOU, CHRISTOPHER LI, None, SOFT MATERIAL LAB TEAM — Gold nanoparticles (AuNPs) have attracted great attention due to their unique properties and potential applications. In recent years, more efforts have been made to the assembly of AuNP into varies of ordered structures such as AuNP wires and sheets in order to transfer their properties from nanoscale to macroscale, as well as exploring new properties. In this work we report a method to assemble AuNP into well defined, free standing frame structure using poly(ethylene oxide) (PEO) lamellar single crystal as the template. By controlling the single crystal size and functioning pattern, we are able to tune the width and size of the AuNP frame. We consider this approach to be an efficient and precise way to assemble AuNP and this methodology could be applied to other metal or semiconductor NPs.

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None

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