

Electroplating of metal nanotubes and nanowires in high aspect-ratio AAO membrane

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Metal nanotubes and nanowires with particular properties which could be used in various applications, like sensor, catalyst, and so on, has received much interest recently. Anodic aluminium oxide(AAO) is a superior candidate of fabricating those nanostructures because of its ordered arrays and simple and mature preparing technique. Compared with traditional CVD, AAO template method is much easier to handle and makes it be able to control the configuration of those nanostructures.

In the article, we are focusing on the electroplating process of a variety of metal (such as Co, Pt, and Pd) on the high aspect-ratio AAO template. By varying the operating conditions, electrolyte, current density, operating mode, and depositing time, we were able to obtain different types of nanostructure.