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The dataset of scanning electron microscope images of silver nanoparticles formed in situ by dopamine chemistry

Tzu-Lan Chang, Tianchi Liu, Jun F. Liang

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: ***The dataset of scanning electron microscope images of silver nanoparticles formed in situ by dopamine chemistry***

: Tzu-Lan Chang, Tianchi Liu, Jun F. Liang

: Stevens Institute of Technology

Contact email: jliang2@stevens.edu

Abstract

The mussel inspired chemistry of dopamine oxidation to form polydopamine (PDA) and in situ reduction of metal ions in solution to form metal nanoparticles have widely opened the application of metal nanoparticles surface modification technology. This article contains the dataset of the scanning electron microscope (SEM) images of silver nanoparticles coated on polyethylene terephthalate (PET) films utilizing dopamine chemistry alone or combined with polyvinylpyrrolidone or glucose. The Ag NPs formed in various environments present round, cubic, or triangle shape. Mendeley Data, http://dx.doi.org/10.17632/bjjrt2dwbn.1

Specifications Table

Subject area	*Surface Chemistry*
More specific subject area	*Metal nanoparticles surface modification*
Type of data	*Image*
How data was acquired	*Scanning Electron Microscope (Auriga Modular Cross Beam workstation, Carl Zeiss, Inc.)*
Data format	*Raw*
Experimental factors	*PET films were immersed in alkaline dopamine solution for 0.5-24 hrs before coating with Ag nanoparticles.*
Experimental features	*Polydopamine coated film in combination with or without reducing reagents will reduce silver ions into silver metals and the silver metals will aggregate to form silver nanoparticles of various shapes.*
Data source location	*Stevens Institute of Technology, Hoboken, NJ, USA*
Data accessibility	*Mendeley Data.* http://dx.doi.org/10.17632/bjjrt2dwbn.1

Value of the data

- The SEM images clearly show the various shapes of the Ag nanoparticles on the surfaces of the polyethylene terephthalate. The dopamine chemistry is universal and it could apply to various materials.
- The shape of the Ag nanoparticles will be different by utilizing different experimental parameters.
- The SEM images serve as a good guide to surface modification utilizing dopamine chemistry and Ag nanoparticles.

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