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## The facile synthesis of Pd nanoflowers with excellent catalytic activity towards CO oxidation: Effect of process parameters

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Microorganism-mediated, CTAC-directed (MCD) method was employed in this work to facilitate synthesis of Pd nanoflowers (PdNFs). A proper dosage of *Pichia pastoris* cells (PPCs), ascorbic acid (AA), Palladium(II) nitrate  $\text{Pd}(\text{NO}_3)_2$  and hexadecyltrimethylammonium chloride (CTAC) concentrations were essential for the growth of the Pd nanoflowers. Process parameters such as the amount of precursor solution and microorganism biomass used, and CTAC concentration significantly affected the resulting morphology of the Pd nanostructures and their subsequent catalytic performance. The as-produced Pd nanostructures were immobilized onto  $\text{TiO}_2$  supports to ascertain the effects of the process parameters on their catalytic performance for CO oxidation. The biomass supported Pd nanoflowers (bio-PdNFs/ $\text{TiO}_2$ ) catalyst showed the best performance, with excellent stability within a time-on-stream of 52 hours without any obvious loss in activity (100% conversion at 100°C).

### Biography

Tareque Odoom-Wubah completed his Master of Engineering Degree, major in chemical engineering at Xiamen University, China. His exceptional performance won him the Chinese Government Distinguish Student scholarship (Xiamen University) to pursue doctoral studies in Chemical Engineering. His research interest includes nanostructures, catalysis and materials engineering. He has authored and co-authored several publications in international journals.

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