

Accepted Manuscript

Title: Seed-mediated Synthesis of Large-diameter Ternary TePtCo Nanotubes for Enhanced Oxygen Reduction Reaction

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PII: S0926-3373(18)30212-1
DOI: <https://doi.org/10.1016/j.apcatb.2018.03.022>
Reference: APCATB 16480

To appear in: *Applied Catalysis B: Environmental*

Received date: 29-11-2017
Revised date: 31-1-2018
Accepted date: 7-3-2018

Please cite this article as: Li W, Xiong Y, Wang Z, Bao M, liu J, He D, Mu S, Seed-mediated Synthesis of Large-diameter Ternary TePtCo Nanotubes for Enhanced Oxygen Reduction Reaction, *Applied Catalysis B, Environmental* (2018), <https://doi.org/10.1016/j.apcatb.2018.03.022>

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Seed-mediated Synthesis of Large-diameter Ternary TePtCo Nanotubes for Enhanced Oxygen Reduction Reaction

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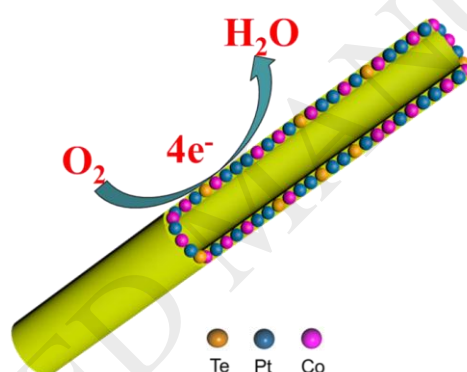
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Graphical abstract



Highlights

- Large-diameter TePtCo nanotube (NT) is successfully synthesized by a Seed-mediated method.
- TePtCo NT with a hollow and hierarchical structure has large surface area and more mass transfer passways.
- Its specific activity and mass activity are 4.6 folds and 3.9 folds over that of the Pt catalyst, respectively.
- It also shows an excellent catalytic stability for TePtCo NTs, much higher than that of the Pt catalyst.
- By DFT calculation, Pt alloying promotes O–O bond breakage and weakens adsorption energy of hydroxyl.

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