

Accepted Manuscript

Title: Regeneration of a sulfur-poisoned methane combustion catalyst: Structural evidence of Pd₄S formation

Authors: Ville H. Nissinen, Niko M. Kinnunen, Mika Suvanto

PII: S0926-3373(18)30487-9
DOI: <https://doi.org/10.1016/j.apcatb.2018.05.057>
Reference: APCATB 16711

To appear in: *Applied Catalysis B: Environmental*

Received date: 13-3-2018
Revised date: 16-5-2018
Accepted date: 19-5-2018

Please cite this article as: Nissinen VH, Kinnunen NM, Suvanto M, Regeneration of a sulfur-poisoned methane combustion catalyst: Structural evidence of Pd₄S formation, *Applied Catalysis B: Environmental* (2018), <https://doi.org/10.1016/j.apcatb.2018.05.057>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



Regeneration of a sulfur-poisoned methane combustion catalyst:

Structural evidence of Pd₄S formation

Ville H. Nissinen,* Niko M. Kinnunen,* Mika Suvanto

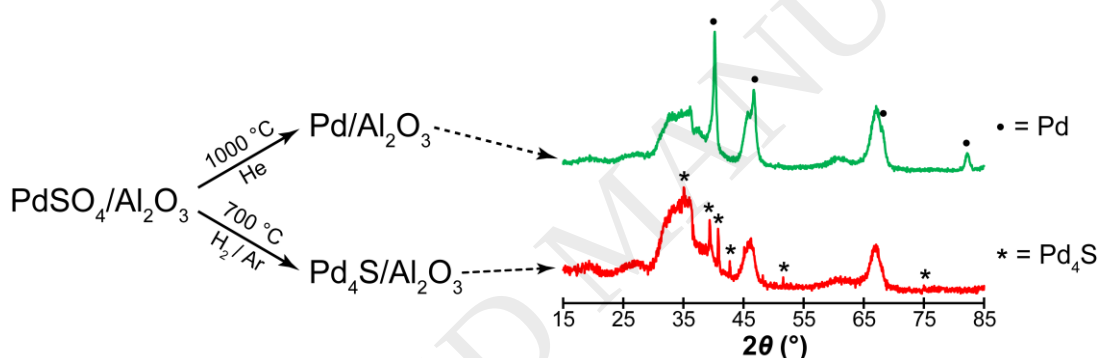
Department of Chemistry, University of Eastern Finland, P.O. Box 111, FI-80101 Joensuu, Finland

*Corresponding author

Email addresses: vnissine@uef.fi (V.H. Nissinen), niko.kinnunen@uef.fi (N.M. Kinnunen), mika.suvanto@uef.fi

(M. Suvanto)

Graphical abstract



Highlights

- Regeneration of a methane combustion catalyst was studied using a PdSO₄/Al₂O₃ model system.
- PdSO₄ behaves differently under inert and reductive atmospheres.
- Decomposition of PdSO₄ under inert atmosphere resulted in the formation of metallic Pd.
- Formation of Pd₄S was observed in decomposition of PdSO₄ under reductive atmosphere.
- Threshold temperature of sulfur removal (about 500 °C) was observed in the regeneration under reductive conditions.

Download English Version:

<https://daneshyari.com/en/article/6498086>

Download Persian Version:

<https://daneshyari.com/article/6498086>

[Daneshyari.com](https://daneshyari.com)