

Accepted Manuscript

Title: Co₄N/nitrogen-doped graphene: a non-noble metal oxygen reduction electrocatalyst for alkaline fuel cells

Authors: Tamás Varga, Gergő Ballai, Livia Vásárhelyi, Henrik Haspel, Ákos Kukovecz, Zoltán Kónya



PII: S0926-3373(18)30588-5
DOI: <https://doi.org/10.1016/j.apcatb.2018.06.054>
Reference: APCATB 16802

To appear in: *Applied Catalysis B: Environmental*

Received date: 22-3-2018
Revised date: 13-6-2018
Accepted date: 19-6-2018

Please cite this article as: Varga T, Ballai G, Vásárhelyi L, Haspel H, Kukovecz Á, Kónya Z, Co₄N/nitrogen-doped graphene: a non-noble metal oxygen reduction electrocatalyst for alkaline fuel cells, *Applied Catalysis B: Environmental* (2018), <https://doi.org/10.1016/j.apcatb.2018.06.054>

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.

Co₄N/nitrogen-doped graphene: a non-noble metal oxygen reduction electrocatalyst for alkaline fuel cells

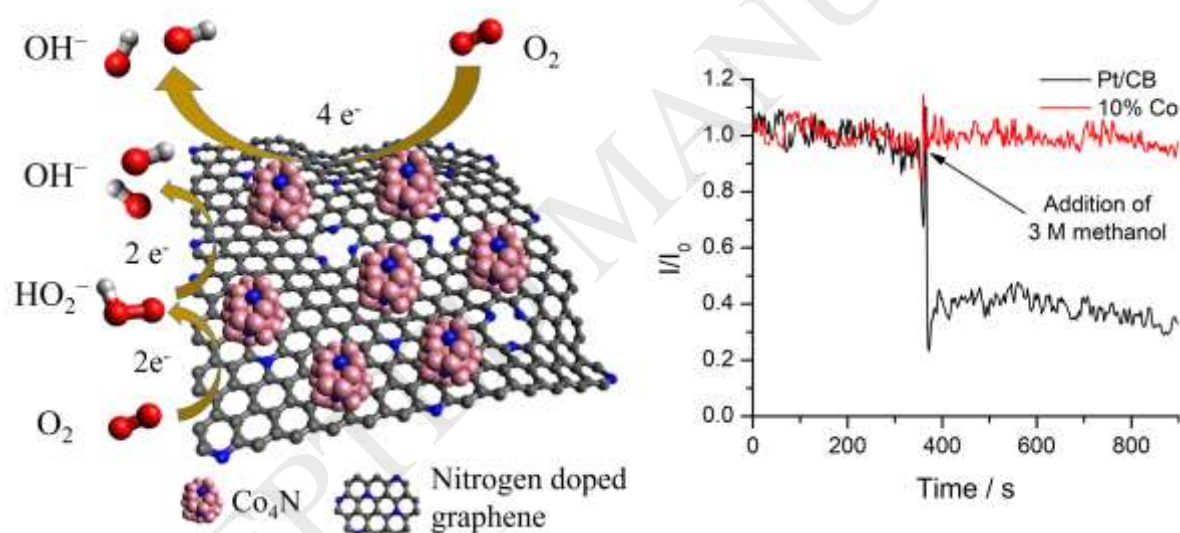
Tamás Varga¹, Gergő Ballai¹, Lívía Vásárhelyi¹, Henrik Haspel^{1,†}, Ákos Kukovecz¹, Zoltán Kónya^{1,2}

¹ Department of Applied and Environmental Chemistry, University of Szeged, H-6720 Szeged, Rerrich Béla tér 1, Hungary

² MTA-SZTE Reaction Kinetics and Surface Chemistry Research Group, H-6720 Szeged, Rerrich Béla tér 1, Hungary

[†] Present address: Division of Physical Sciences and Engineering, KAUST Catalysis Center (KCC), King Abdullah University of Science and Technology (KAUST), 4700 KAUST, Thuwal, 23955-6900, Saudi Arabia.

Graphical abstract



Highlights

- The composites were formed via annealing in ammonia atmosphere.
- Cobalt nitride particle size increased with increasing cobalt content.
- Oxygen reduction reaction activity was studied in alkaline media.
- The ORR activity of the composites was comparable to that of Pt/CB catalysts and literature data.
- The composites showed improved methanol tolerance compared to Pt/CB catalysts.

Download English Version:

<https://daneshyari.com/en/article/6498249>

Download Persian Version:

<https://daneshyari.com/article/6498249>

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