

# Supporting Information

## Chemical Structure of Nitrogen-Doped Graphene with Single Platinum Atoms and Atomic Clusters as a Platform for the PEMFC Electrode

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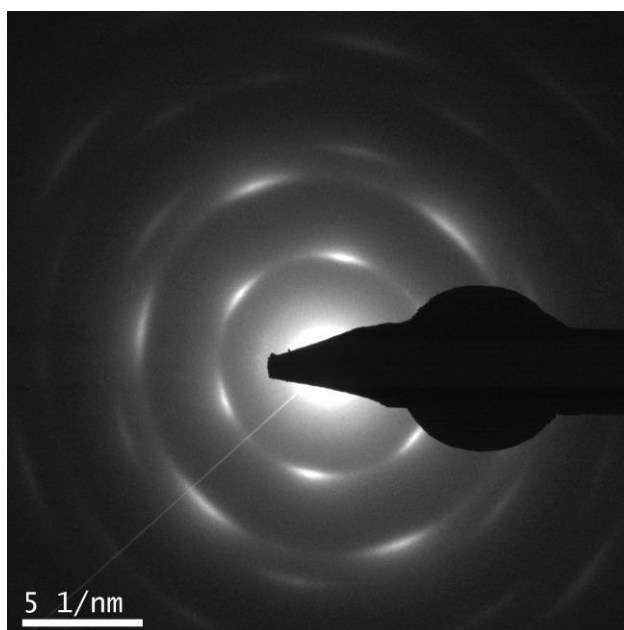
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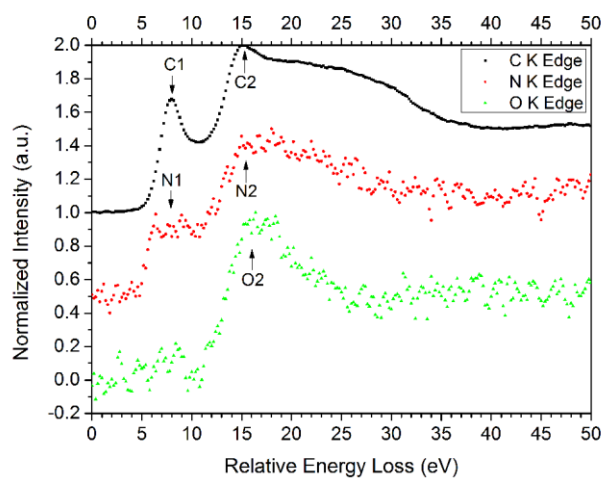
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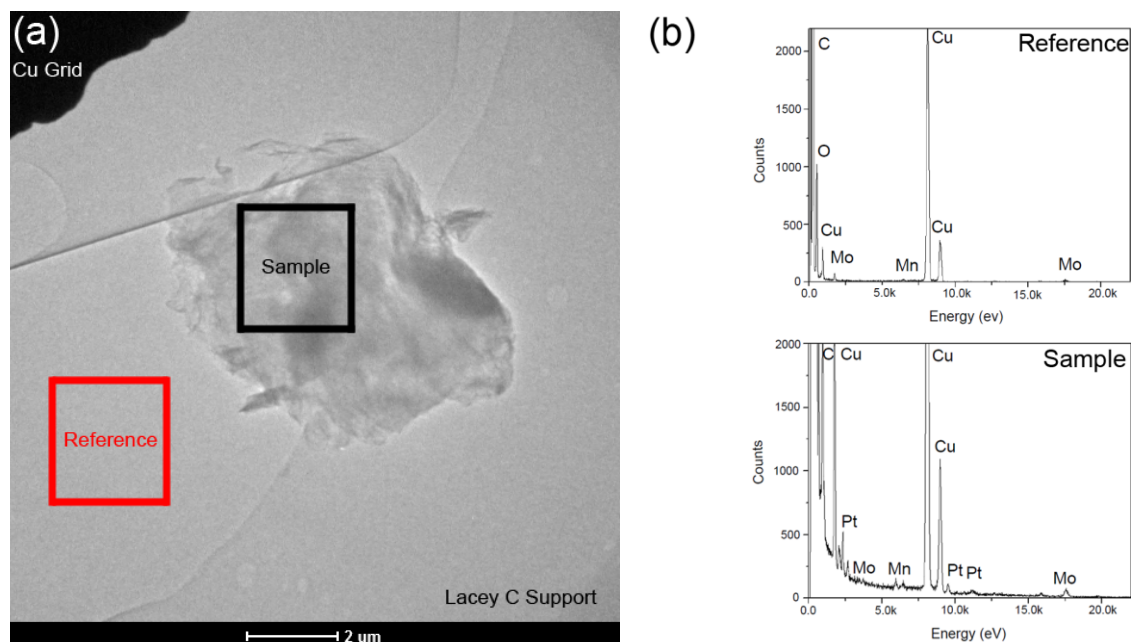
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**Figure S1.** Diffraction pattern of N-doped graphene with 50 ALD Pt cycles. The diffraction pattern shows elongated spots from grain and stacking misorientations, lattice folding, and defects within the lattice in the field of analysis, where a single main grain was analyzed.



**Figure S2.** EELS of C-K, N-K, and O-K edges acquired from N-doped graphene with 50 ALD Pt cycles. The  $\pi^*$  and  $\sigma^*$  components of the C-K edge are labeled as C1 and C2, respectively. Furthermore, the N-K edge is also divided by the  $\pi^*$  (N1) and  $\sigma^*$  (N2) regions, where the O-K edge contains only a  $\sigma^*$  (O2) component.



**Figure S3.** (a) TEM image of N-doped graphene with 100 ALD Pt cycles illustrating the acquisition areas of the EDXS. (b) EDX spectra acquired over vacuum (reference) and over the sample, resulting in multiple metallic peaks from the sample holder, apertures, and instrumental contributions.