

Abstract Submitted
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Pair distribution function analysis on pyrolyzed porphyrin JOE PETERSON, NMSU, HEINZ NAKOTTE TEAM, THOMAS PROFFEN COLLABORATION — Transition metal-porphyrins are well known to be effective catalysts. One of particular interest in research surrounding fuel cells is CoTMPP because it facilitates 4e⁻ oxidation reduction reactions (ORR). However, under conditions found in proton exchange membrane fuel cells (PEMFC) the catalytic properties begin to breakdown and ORR shifts toward 2e⁻. This negative effect can be largely overcome by pyrolyzing the CoTMPP. Though the pyrolysis improves the catalytic properties, it introduces uncertainty in site activity. Extensive efforts with TEM and XPS have been taken to better understand the structure, but still ambiguity of active sites persists. Here we present addition studies with pair distribution function analysis to aid in the growing understanding of the structure of the pyrolyzed porphyrin.

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