Supporting Information

**Figure S1.** SEM images of (a,d) MnO, (b,e) MnS, and (c,f) MnSe.

**Figure S2.** N\textsubscript{2} sorption isotherms (measured at 77K) of the MnX catalysts.

**Figure S3.** XPS survey scan spectra of (a) MnO and (b) MnS.
Figure S4. (a) LSV curves of MnO at various speeds and (b) the corresponding K-L plots at different potentials.

Figure S5. (a) LSV curves of MnS at various speeds and (b) the corresponding K-L plots at different potentials.

Figure S6. Tafel plots derived from LSV results for the different catalysts.
Figure S7. (a) LSV curves of MnS at various speeds and (b) the corresponding K–L plots at different potentials.

Figure S8. Comparison of specific and mass activities for MnSe and Pt/C catalysts.

Figure S9. ORR response initially and after 1000 CV cycles for (a) MnSe and (b) Pt/C.