Data set for

**Effects of heat treatment atmosphere on the structure and activity of Pt3Sn nanoparticle electrocatalysts: a characterisation case study**

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Data provided in two zip files: echem data and figures (all figures, TEM, CO stripping and alcohol oxidation) and Xray data (XRD, XPS, and XAFS).

1. **TEM and HRTEM** (Figure 1 and Figure S1)

Fig TEM.jpg, TEM.psd,

1. **XRD** (Figure 2, Table 3, and Figure S2)

Fig2 XRD.tif, XRD (folder, in which the file names including OC, OCA, OCH and OCO stand for the parent, Ar-treated, H2-treated and air-treated PtSn/C, respectively. The origin file is also included)

1. **XPS** (Figure 3, Table 1, and Figure S3)

Fig3 Sn 3d XPS.tif, XPS (folder, in which the raw data, fitting data and origin file are included)

1. **XAFS** (Figure 4 and Figure 5 XAFS, Table 1, Table 2, Figure S4, and Table S1)

Fig4 XANES and LCF.tif, Fig5 EXAFS FITTING.tif, XAFS prj (folder with raw dat files and Athena project files, in which OC, OCA, OCH and OCO stand for the parent, Ar-treated, H2-treated and air-treated PtSn/C, respectively)

1. **CO stripping** (Table 4 and Figure 6)

Fig6 EC\_CO stripping.tif, CO stripping folder

1. **Alcohol oxidation** (Figure 7)

Fig7 EC\_alcohol oxidation.tif, alcohol oxidation folder (methanol, ethanol and methanol data are in respective folders)