----- GENERAL INFORMATION -----

DATA TITLE: SEM/EDS analysis of surfaces of ferritic Fe-Cr-Al-Mo alloy Kanthal APMT and Cr-Mo-V steel T91 (UNS: K90901) after oxidation at 1200 C for 2 h
PROJECT TITLE: Materials Characterization of High-Temperature Oxidation on ferritic Fe-Cr-Al-Mo alloy Kanthal APMT and Cr-Mo-V steel T91 (UNS: K90901)

DATA ABSTRACT: Scanning electron microscopy (SEM) secondary electron images of surfaces on ferritic Fe-Cr-Al-Mo alloy Kanthal APMT and Cr-Mo-V steel T91 (UNS: K90901) before and after oxidation at 1200 degrees Celsius for 2 h in steam or air. Metadata detailing SEM imaging settings are included for each photo.

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ASSOCIATED PUBLICATIONS:

T. Copeland-Johnson, C.K.A. Nyamekye, S.K. Gill, L. Ecker, N. Bowler, E.A. Smith, R.B. Rebak, Characterization of Kanthal APMT and T91 oxidation at beyond design-basis accident temperatures, Corros. Sci. (2020).

COLLECTION INFORMATION:

      Time period(s): 2017-2019

      Location(s): Iowa State University, Brookhaven National Laboratory

----- FILE DIRECTORY -----

----- FILE LIST-----

File Name	Description
SEM_APMT_Air.jpg	Secondary electron image of the surface of Kanthal APMT after oxidation in air.
SEM_APMT_Air_Metadata.txt	Metadata for secondary electron image of the surface of Kanthal APMT after oxidation in air.
SEM_APMT_Control.jpg	Secondary electron image of the surface of Kanthal APMT before oxidation.
SEM_APMT_Control_Metadata.txt	Metadata for secondary electron image of the surface of Kanthal APMT before oxidation.
SEM_APMT_Steam.jpg	Secondary electron image of the surface of Kanthal APMT after oxidation in steam.

SEM_APMT_Steam_Metadata.txt	Metadata for secondary electron image of the surface of Kanthal APMT after oxidation in steam.
SEM_T91_Air.jpg	Secondary electron image of the surface of T91 after oxidation in air.
SEM_T91_Air_Metadata.txt	Metadata for secondary electron image of the surface of T91 after oxidation in air.
SEM_T91_Control.jpg	Secondary electron image of the surface of T91 before oxidation.
SEM_T91_Control_Metadata.txt	Metadata for secondary electron image of the surface of T91 before oxidation.
SEM_T91_Steam.jpg	Secondary electron image of the surface of T91 after oxidation in steam.
SEM_T91_Steam_Metadata.txt	Metadata for secondary electron image of the surface of T91 after oxidation in steam.

----- *METHODS AND MATERIALS* -----

------- EQUIPMENT -------

Manufacturer: JEOL
Model: 7600F
Embedded Software/Firmware Name: (if applicable) N/A
Embedded Software/Firmware Version: (if applicable) N/A
Additional Notes: Equipped with Oxford Instruments EDS 80 mm^2 X-Max silicon drift detector (129 eV resolution) operated through the INCA^{TM} software suite.

------- LICENSING -------

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