

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

DATA TITLE: Photos and optical microscope images 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: Images of 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 air or steam were digitally photographed. Higher magnification images detailing the surface morphology were taken using optical microscopy.

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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 Name	Description
Optical_APMT_Air.png	Optical micrograph image of Kanthal APMT oxidized in air
Photo_APMT_Air.jpg	Photograph of Kanthal APMT after oxidation in air
Optical_APMT_Control.png	Optical micrograph image of Kanthal APMT before oxidation
Photo_APMT_Control.jpg	Photograph of Kanthal APMT before oxidation
Optical_APMT_Steam.png	Optical micrograph image of Kanthal APMT oxidized in steam
Photo_APMT_Steam.jpg	Photograph of Kanthal APMT after oxidation in steam
Optical_T91_Air.png	Optical micrograph image of T91 oxidized in air
Photo_T91_Air.jpg	Photograph of T91 after oxidation in air
Optical_T91_Control.png	Optical micrograph image of T91 before oxidation
Photo_T91_Control.jpg	Photograph of T91 before oxidation
Optical_T91_Steam.png	Optical micrograph image of T91 oxidized in steam
Photo_T91_Steam.jpg	Photograph of T91 after oxidation in steam

----- SOFTWARE -----

Name: ImageJ

Version: 1.51k

System Requirements: ImageJ will run on any system that has a Java 8 (or later) runtime installed. This includes, but is not limited to:

Windows XP, Vista, 7 or 8 with Java installed from java.com

Mac OS X 10.8 "Mountain Lion" or later with Java installed from java.com

Ubuntu Linux 12.04 LTS or later with OpenJDK 8 installed

URL: <http://imagej.nih.gov>

Developer: George H. Silva

Additional Notes: N/A

----- EQUIPMENT -----

Manufacturer: Nikon

Model: Mm-40

Embedded Software/Firmware Name: (if applicable) N/A

Embedded Software/Firmware Version: (if applicable) N/A

Additional Notes: Equipped with Digital Sight DS-2Mv camera

Manufacturer: Canon

Model: PowerShot A2300

Embedded Software/Firmware Name: (if applicable) N/A

Embedded Software/Firmware Version: (if applicable) N/A

Additional Notes: N/A

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