

Materials List for:

Full-field Strain Measurements for Microstructurally Small Fatigue Crack Propagation Using Digital Image Correlation Method

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Materials

Name	Company	Catalog Number	Comments
Acetone	Sigma-Aldrich	STBH7695	Acetone pyurity ≥ 99.5 %
Argon gas	Oy AGA Ab, Industrial Gases (Finland)	UN 1006	Gas purity ≥ 99.9999 %
Chamber furnace	Lenton	4934	heat range 20-1200 °C
Commercial software DaVis 8	LaVision Inc.		Commercial software used for crack growth rate and strain field analysis
Custom-made pneumatic stamping tool	Aalto University		Made in Aalto University
Diamond paste	Struers Inc.	DP-Mol. 3 µm, DP-Nap. 1 µm,	Paste for polishing
Emery paper	Struers Inc.	FEPA P #800, FEPA P #1200, FEPA P #2500	Paper for grinding
Ethanol	Altia Industrial	ETAX Ba	Ethanol pyurity ≥ 99.5 %
FEG-SEM scanning electron microscope	ZEISS	ULTRA 55	EBSD analysis
Ferritic stainless steel	Outokumpu Stainless Oyj (Finland)	Core 441/4509 (ASTM UNS S43940)	3 mm rolled plate
For Vacuum pump	Leybold-Heraeus	D4B/WS	
Grinding machine	Struers Inc.	LaboPol-21	Hand grinding
MasterMet 2 Non-Crystallizing Colloidal Silica Polishing Suspension	Buehler Inc.	40-6380-064	0.02 µm colloidal silica
MatLab software	MathWorks Inc.		MatLab software used as a platform for MTEX toolbox
Micro Vickers hardness tester	Buehler Inc.	1600-6400	
MTEX software	Open source		Open source toolbox based on MatLab for analysis of the EBSD data (http://mtex-toolbox.github.io/)
Optical microscope	Nikon Corporation	EPIPHOT 200	
Polishing machine	Struers Inc.	LaboPol-5	Hand polishing
Servo hydraulic machine	MTS system corporation	858 Table Top System	
Turbomolecular pump	Leybold-Heraeus	Turbovac 50	
Vibratory polisher	Buehler Inc.	VibroMet 2	Automatic polishing
Wire-cut EDM	TamSpark Oy	Charmilles robofil 400	wire diameter 0.15 mm