

Characterizing Dissipative Elastic Metamaterials Produced by Additive Manufacturing

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jove.com/video/66898

Materials

Name	Company	Catalog Number	Comments
Acrylonitrile Butadiene Styrene (ABS)	BASF	https://www.xometry.com/resources/3d-printing/abs-3d-printing-filament/	Print temperature: 225-245 °C
COMSOL Multiphysics 6.0	COMSOL	https://www.comsol.com/product-download/6.0	Finite element software
DAQ system for DIC	Dantec Dynamics	https://www.dantecdynamics.com/components/daq-controllers/	
Discovery DSC 25	TA Instruments	https://www.tainstruments.com/dsc-25/	Software: Trios; Pan: Aluminium
DMA 8000	Perkin Elmer	https://www.perkinelmer.com/product/dma-8000-analyzer-qtz-window-ssti-clamp-n5330101	Software: PerkinElmer
DN2.813-04 Spectrum hybridNetbox	Spectrum Instrumentation	https://spectrum-instrumentation.com/products/details/DN2813-04.php	4-channel signal generator and digitizer; Software used: SBench6
FDM 3D printer Ultimaker 3.0	Ultimaker	https://ultimaker.com/3d-printers/s-series/ultimaker-s3/	Slicer: Ultimaker Cura
Polytec laser unit OFV 534	Polytec GmbH	https://www.polytec.com/eu/vibrometry/products	Laser and laser head, as a set
Polytec OFV-5000 vibrometer controller	Polytec GmbH	https://www.polytec.com/eu/vibrometry/products	LDV controller
Power amplifier Type 2718	Bruel & Kjaer	https://www.bksv.com/en/instruments/vibration-testing-equipment/vibration-amplifiers/exciters/power-amplifier-type-2718	Power output capability of 75 VA
PRYY-0110	PI Ceramic	https://www.piceramic.com/en/products/piezoceramic-components/disks-rods-and-cylinders/piezoelectric-discs-1206710	Ceramic-based, Ag-screened piezoelectric discs
Q400 DIC	Limess Messtechnik & Software GmbH	https://www.limess.com/en/products/q400-digital-image-correlation	Software: Istra4D
Thermogravimetric Discovery TGA 550	TA Instruments	https://www.tainstruments.com/tga-550/	Software: Trios; Pan: Aluminium
UniVert 1kN Tensile testing machine	Cell Scale biomaterials testing	https://www.cellscale.com/products/univert/	Software: UniVert; load cell capacity: 1 kN

WMA-300 High speed high voltage amplifier	Falco Systems	https://www.falco-systems.com/High_voltage_amplifier_WMA-300.htm	50x amplification up to +150 V and -150 V with respect to ground
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