

Materials List for:

Visually Based Characterization of the Incipient Particle Motion in Regular Substrates: From Laminar to Turbulent Conditions

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Materials

Name	Company	Catalog Number	Comments
MCR 302 Rotational Rheometer	Anton Paar	Induction of shear laminar flow	
Measuring Plate PP25	Anton Paar	Induction of shear laminar flow	
Peltier System P-PTD 200	Anton Paar	Keep temperature of silicon oils constant in the system at laminar flow	
Silicone oils with viscosities of approx. 10 and 100 mPas	Basildon Chemicals	Fluid used to induced the shear in the particles	
Soda-lime glass beads of (405.9 ± 8.7) µm	The Technical Glass Company	Construction of the regular substrates for laminar flow conditions	
Opto Zoom 70 Module 0.3x-2.2x	WEISS IMAGING AND SOLUTIONS GmbH	Imaging system for recording the bead motion in the rheometer	
2 x TV-Tube 1.0x, D=35 mm, L=146.5 mm	WEISS IMAGING AND SOLUTIONS GmbH	Imaging system for recording the bead motion in the rheometer	
UI-1220SE CMOS Camera	IDS Imaging Development Systems GmbH	Imaging system for recording the bead motion in the rheometer	
UI-3590CP CMOS Camera	IDS Imaging Development Systems GmbH	Imaging system for recording the bead motion in the rheometer	
Volpi IntraLED 3 - LED light source	Volpi USA	Imaging system for recording the bead motion in the rheometer	
Active light guide diameter 5mm	Volpi USA	Imaging system for recording the bead motion in the rheometer	
300 Watt Xenon Arc Lamp	Newport Corporation	Imaging system for recording the bead motion in the rheometer	
Wind-tunnel with open jet test section, Göttingen type	Tintschl BioEnergie und Strömungstechnik AG	Induction of turbulent flow	
Glass spheres of (2.00 ± 0.10) mm	Gloches South Korea	Construction of the regular substrates for turbulent flow conditions	
Alumina spheres of (5.00 ± 0.25) mm	Gloches South Korea	Targeted bead for experiments	
CTA Anemometer DISA 55M01	Disa Elektronik A/S	Measurement of flow velocity in the wind tunnel	
Miniaure Wire Probe Type 55P15	Dantec Dynamics	Measurement of flow velocity in the wind tunnel	
HMO2022 Digital Oscilloscope, 2 Analogue. Ch., 200MHz	Rohde & Schwarz	Measurement of flow velocity in the wind tunnel	

Phantom Miro eX1 High-speed Camera	Vision Research IncVis	Imaging system for recording the bead motion in the wind-tunnel	
Canon ef 180mm f/3.5 l usm macro lens	Canon	Imaging system for recording the bead motion in the wind-tunnel	
Table LED Lamp	Gloches South Korea	Imaging system for recording the bead motion in the wind-tunnel	