

Supporting Information

Transparent Tunable Acoustic Absorber Membrane using Inkjet Printed PEDOT:PSS Thin-film Compliant Electrodes

Milan Shrestha^{1,2}, Zhenbo Lu³⁺, Gih-Keong Lau^{1*}

¹School of Mechanical and Aerospace Engineering, ² Singapore Center of 3D Printing, Nanyang Technological University, Singapore 639798

³ Temasek Laboratories, National University of Singapore, Singapore 117411

⁺Co-Corresponding author. Email: tslluz@ntu.edu.sg

^{*}Corresponding author. Email: mgklau@ntu.edu.sg

Supporting Figures

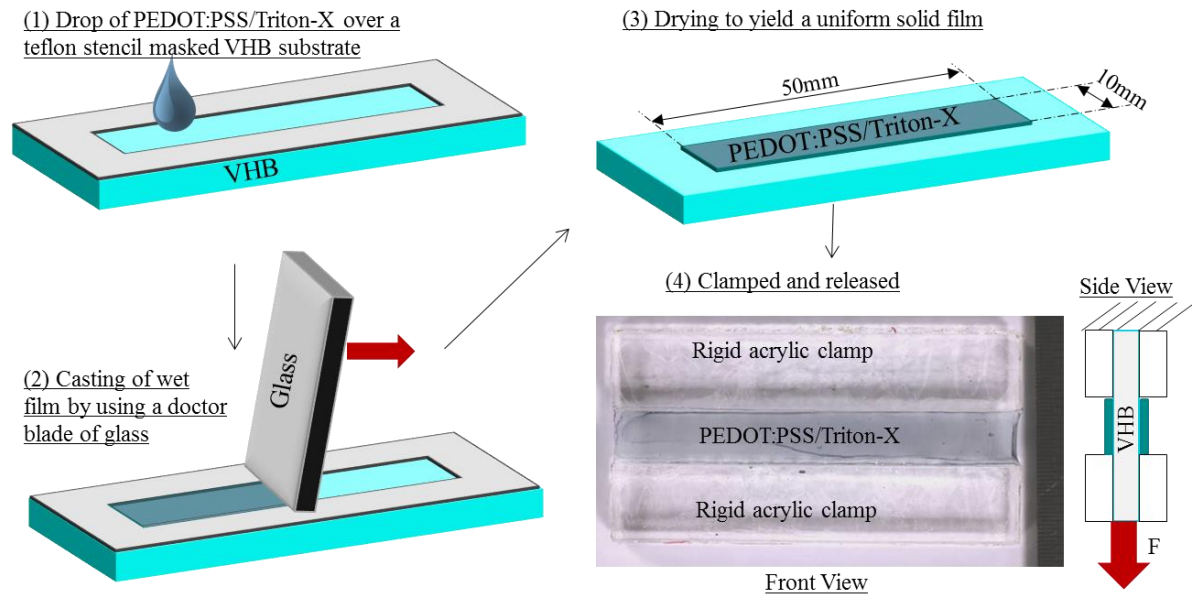


Figure S1. Fabrication of a tensile-test sample, which consists of a uniaxially pre-stretched VHB tape (F9473PC) sandwiched by a pair of transparent conductive polymeric nanometric film

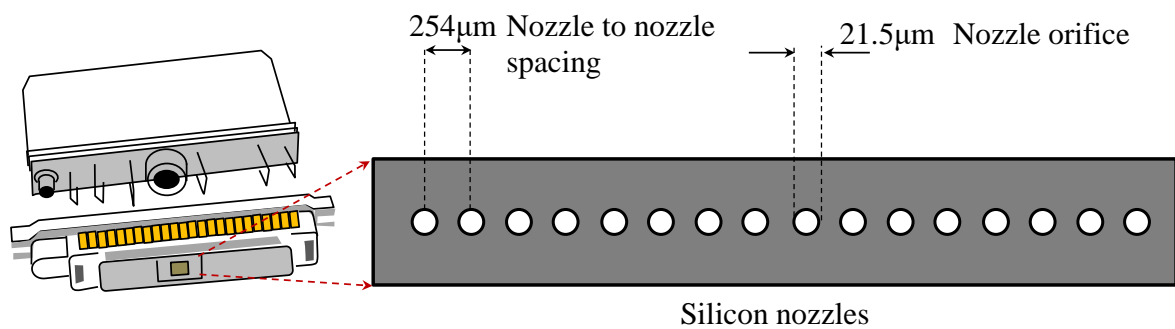


Figure S2. Nozzle parameters for a Dimatix Material Cartridge (Redrawn)

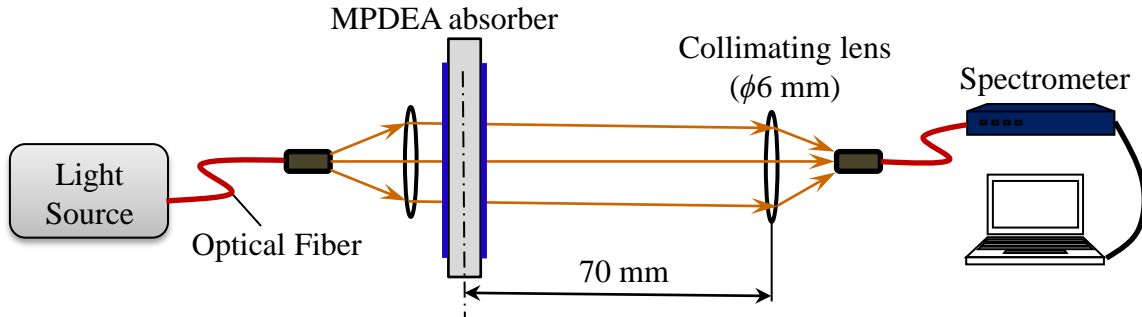


Figure S3. Experimental setup for measuring the inline optical transmittance

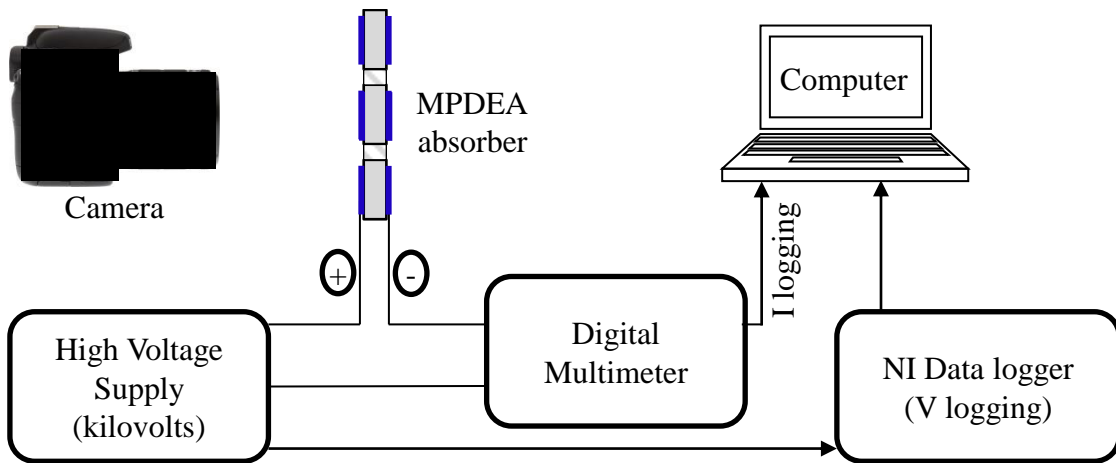


Figure S4. Experimental setup for electromechanical activation

Supporting Movie

Movie S1. Voltage activation of dielectric elastomer device using PEDOT:PSS nanometric thin-film compliant electrodes: Frame (1) voltage induced areal expansion of PEDOT:PSS nanometric thin-film compliant electrodes until electrical breakdown; Frame (2) voltage induced hole-diameter contraction and corresponding shift of acoustic absorption spectrum.