SUPPLEMENTARY MATERIAL

Design and optimizations of a high-throughput valve-based microfluidic device for single cell compartmentalization and analysis

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I. Fabrication of master molds for PDMS casting and device assembly

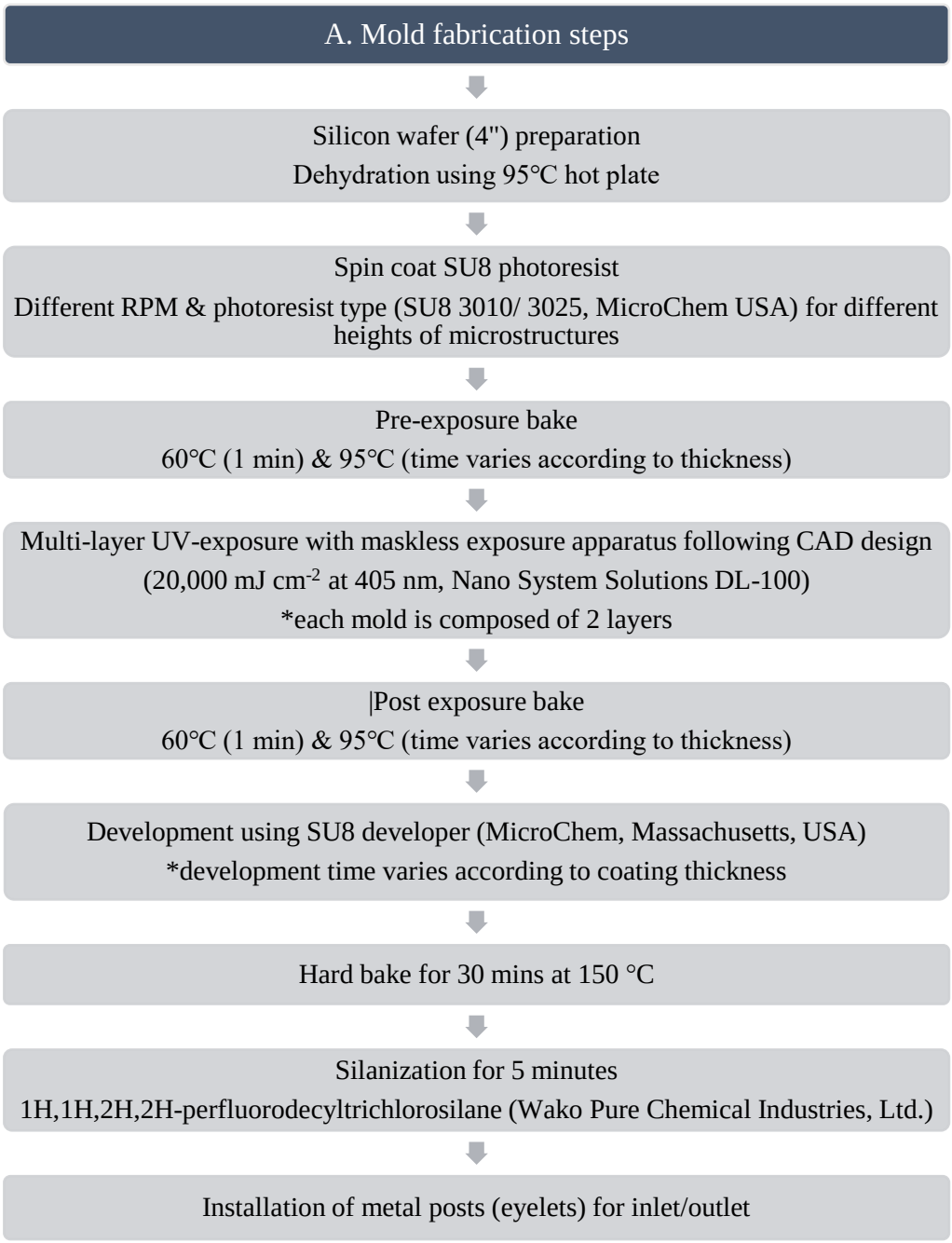


Figure S1. Outline of the mold fabrication steps

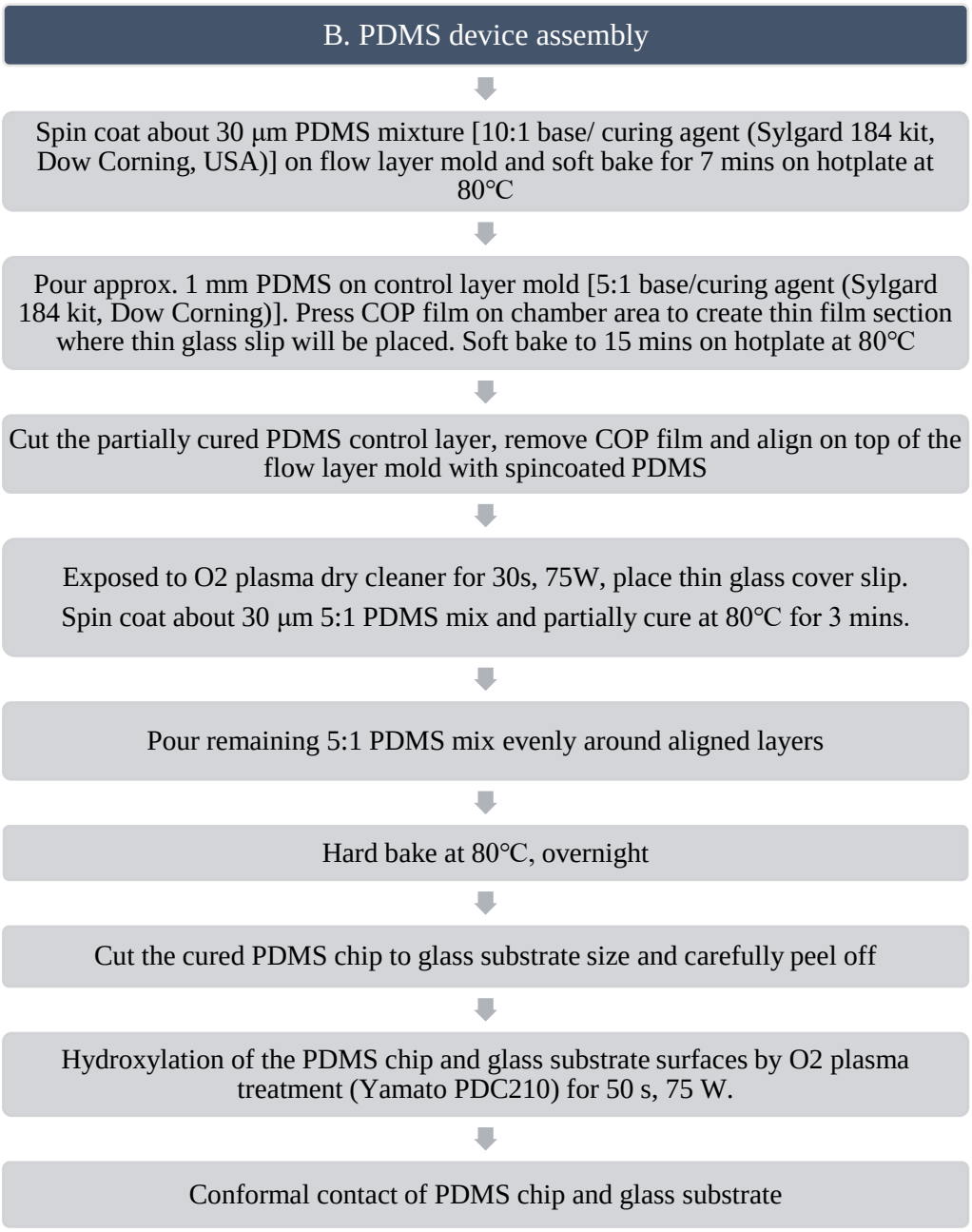
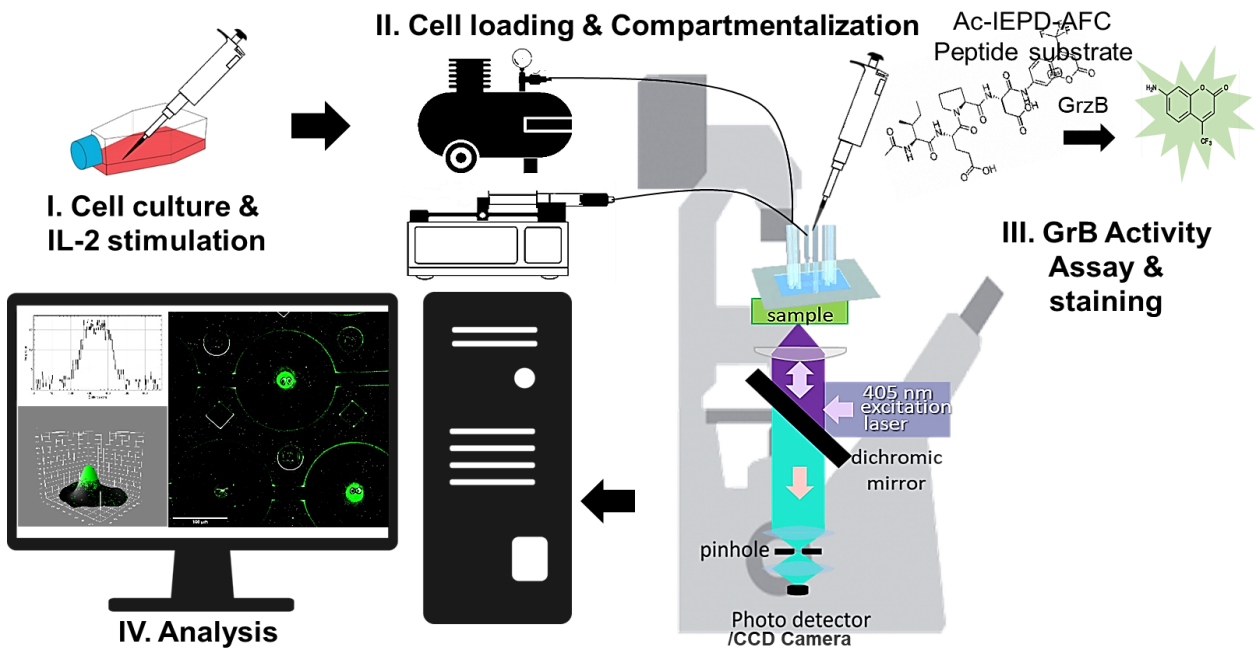


Figure S2. Outline of the microfluidic device assembly



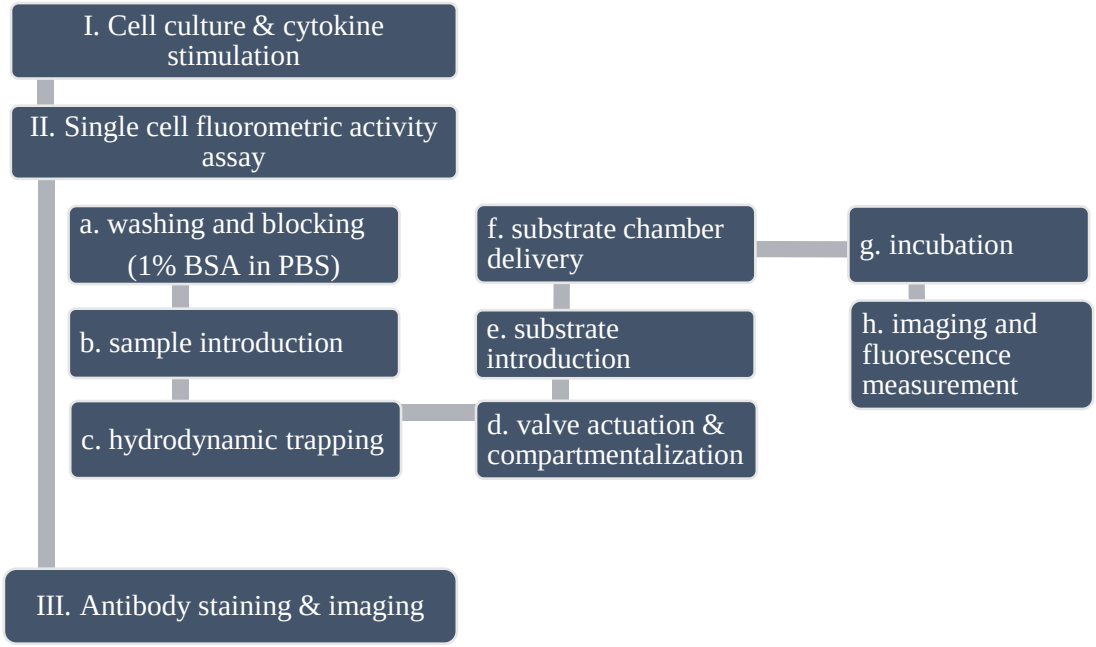


Figure S4. Illustration depicting the steps of microfluidic device operation for single cell fluorometric activity assay.

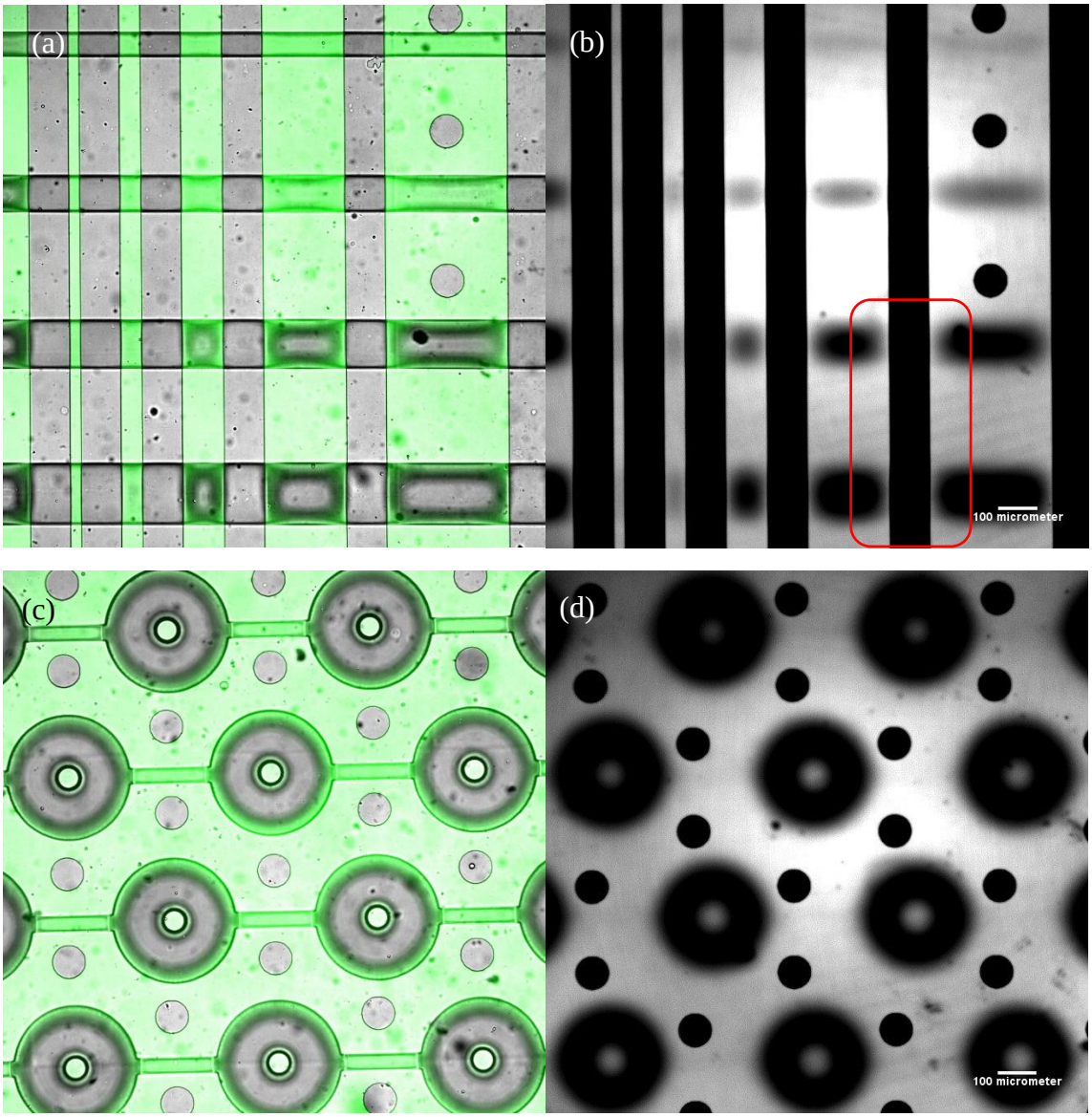


Figure S3. Microscope images of fluorescent solution filled microfluidic channels with air actuated valves at 0.14 MPa (a) multicolor (merged) image of the channels and actuated rectangular valves (b) monochrome (488 filter) showing the gaps present at incompletely closed corners (c) multicolor (merged) image of the channels and actuated circular valves (d) monochrome (488 filter) image of sealed microchambers.

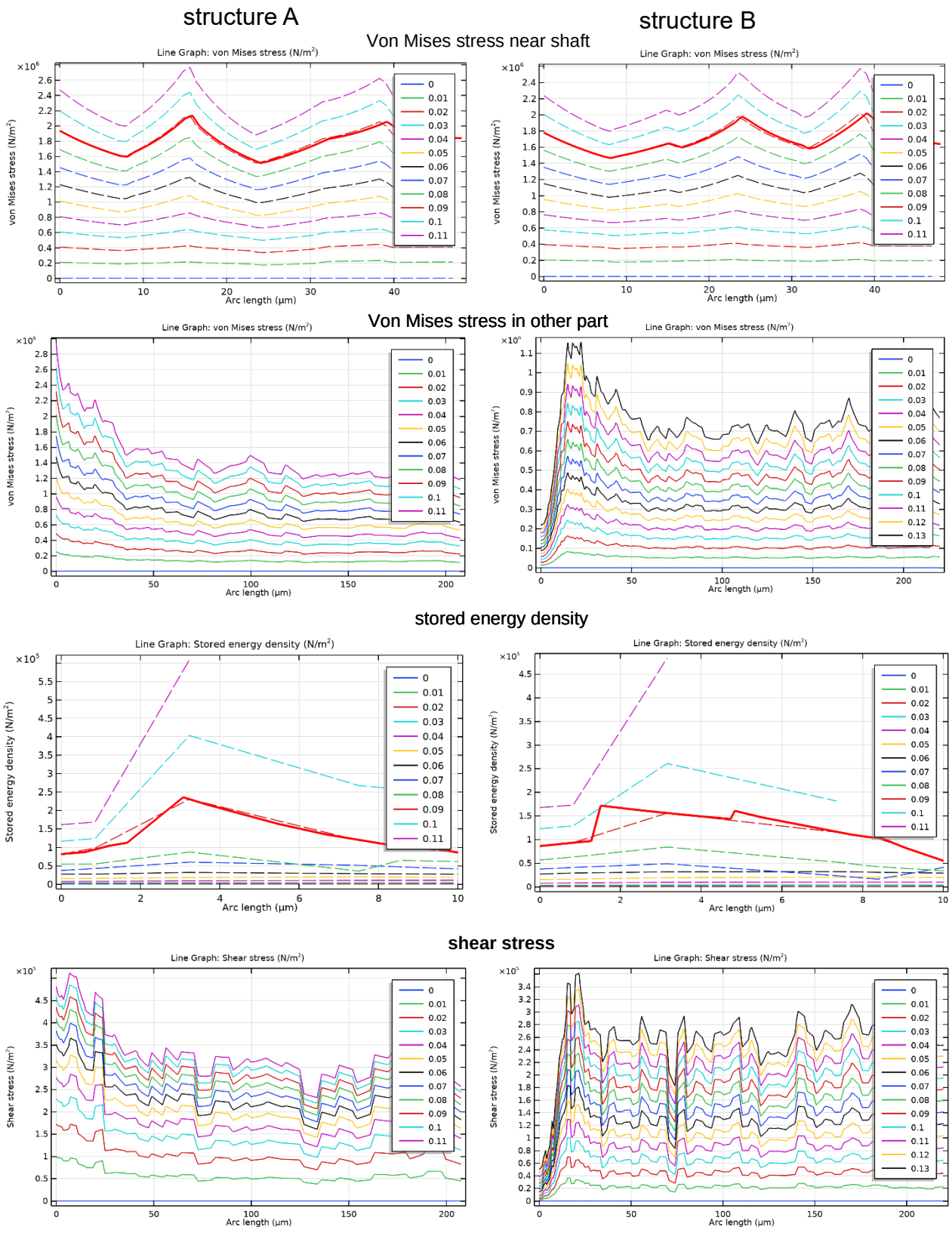


Figure S5. Comparison of the von Mises stress, total stored or strain energy density, and shear stress in structures A and B