S2.2.1 and PP4 - *Macroscale Simulation of N95 Mask Filtration and its Ageing*

Mohammad Jamali[1], Hooman Tafreshi[1], Behnam Pourdeyhimi[1]
[1]North Carolina State University

In this talk, we present an overview of our computational study on N95 mask filtration and its ageing. First, the N95 geometry is produced in ANSYS based on the existing data from the literature. The overall efficiency of the mask is compared to the literature experimental data and the macroscale model is validated. Second, the mask is loaded with cluster of particles and its efficiency due to mechanical and electrical mechanisms is recorded. The results show that the mechanical efficiency increases with time but electrical efficiency goes down due to shielding. As the result, the overall efficiency decreases first but increases again due to the mechanical filtration being dominant.

Mohammad Jamali

Mohammad Jamali is a postdoctoral scholar at NC State University, recently graduated from Virginia Commonwealth University with a Ph.D. in Mechanical engineering. He currently works in the filtration field with a focus on the modeling of N95 masks.

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