

Modeling and Validation of Microspheres Generation in the Modified T-Junction Device

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Abstract : This paper presents a model for a modified T-junction device for microspheres generation. The numerical model is developed using a commercial software package: COMSOL Multiphysics. In order to test the accuracy of the numerical model, multiple variables, such as the flow rate of cross-flow, fluid properties, structure, and geometry of the microdevice are applied. The results from the model are compared with the experimental results in the diameter of the microsphere generated. The comparison shows a good agreement. Therefore the model is useful in further optimization of the device and feedback control of microsphere generation if any.

Keywords : CFD modeling, validation, microsphere generation, modified T-junction

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