

# 2<sup>ND</sup> INTERNATIONAL MICROFLUIDICS CONGRESS

May 23-24, 2019 | Las Vegas, USA

## Inertial micromixing in curved serpentine micromixers with different curvature angles

Rana Altay

Sabanci University, Turkey

Micromixing is a crucial component of microfluidic systems which require mixing reagent molecules, fluids, or species for chemical reactions, which has applications in biomedical systems, chemical reactors, and polymerization. In this study, three curved serpentine micromixers consisting of ten segments with curvature angles of 180°, 230°, and 280° were fabricated to investigate the effects of curvature angle on inertial micromixing of two fluids. In this regard, water and diluted Rhodamine B solution were pumped into the micromixers over

flow rates of 400-3000 $\mu$ L/min. To characterize and compare the mixing performance of the micromixers and to understand the underlying mechanisms, fluorescent intensity maps and mixing indices were utilized. According to the results, up to the Reynolds number of 150, the mixing performance of the micromixers with curvature angles of 180° and 230° was similar to each other. While the micromixer having segments with 280° curvature angle showed higher mixing index values and thus

### Biography

Rana Altay is a Master student in Mechatronics Engineering Program at Sabanci University, Istanbul under the supervision of Prof. Ali Kosar. She received a B.Sc diploma in Mechatronics Engineering from the Sabanci University with Energy minor diploma. She specialized on Heat and Mass transfer with the area of interests; Microfluidics, Acoustofluidics, Cavitation and Energy Harvesting. Rana Altay worked as an assistant in various courses during her undergraduate education and is now teaching assistant in graduate degree.

raltay@sabanciuniv.edu