Geometrical Optimization of Helical Flow in Grooved Micromixers

N. Scott Lynn and David S. Dandy

Supplementary Information: Figure S3

Figure S3 displays the optimized values of η as a function of the channel aspect ratio h/w for the range of parameters considered in this study. The curves shown in figure S3 had no dependence on the ridge length ratio b/w. These results are in contradiction with previous studies of flow over grooved structures, which concluded that the h/w ratio had negligible impact on mixing efficiency. It is clear from figure S3 that h/w is an important parameter in the design of optimized SHM-type mixing devices. The optimized values of h/w for $d/h < 0.6$ and $d/h > 1.6$ lie outside the range of parameters examined in this study.

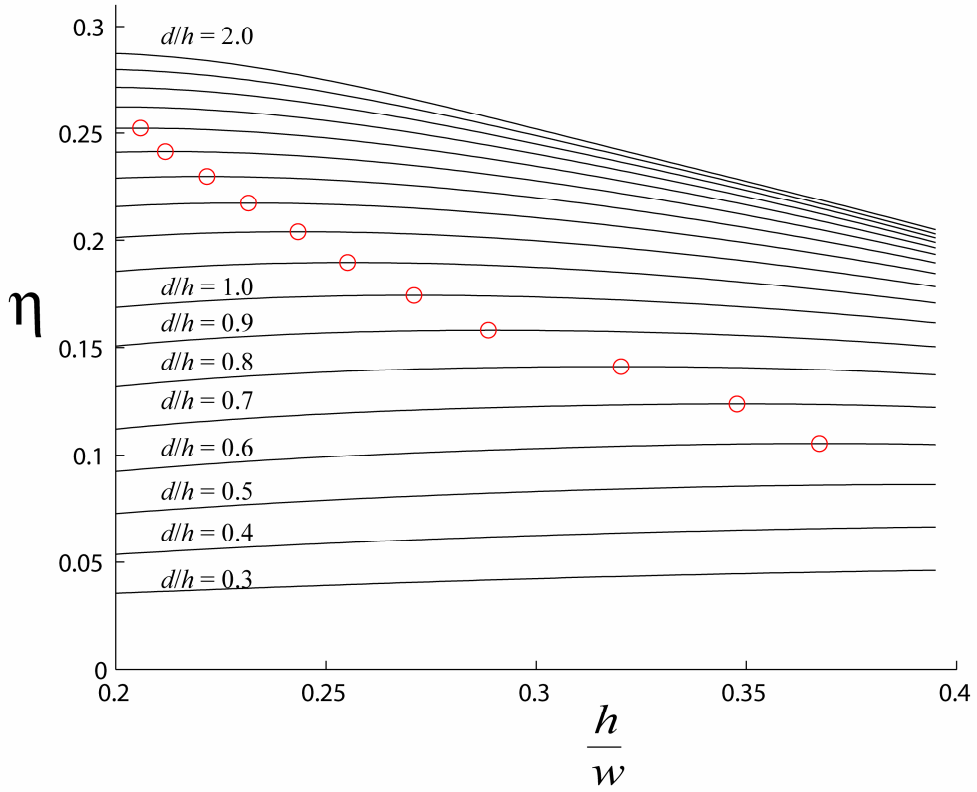

Figure S3. η vs. h/w for channels with $b/w = 0.15$ and d/h ranging in increments of 0.3 to 2.0. The maximum values of η on each line are shown with the red circles.