Supplementary Information for
Finding the optimal design of a passive microfluidic mixer

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1   Description of supplementary files

1.1   Video files

- *s1.mp4* is the concentration profiles of 0 to 200 generations of NSGA-II mixer designs.

- *s2.mp4* is the pressure profiles of 0 to 200 generations of NSGA-II mixer designs.

- *s3.mp4* is the velocity magnitude profiles of 0 to 200 generations of NSGA-II mixer designs.

1.2   Code to generate random mixer designs

The file *code.7z* contains the MATLAB script we used to generate 6069 random mixer designs.

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Program entrance
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1.3 Guideline to implement NSGA-II for specific applications

We used a NSGA-II package implemented in MATLAB from github.com. The homepage of this package is *https://github.com/chudur-budur/nsga2-matlab*. This package has included most functionality we need to use to optimizing the mixer designs or other applications, such as genetic operators, sorter, checking dominance and etc. The major part we need to customize is adding the simulation part (described above) into the main program. Please find the description of the specific functions we used from this package.