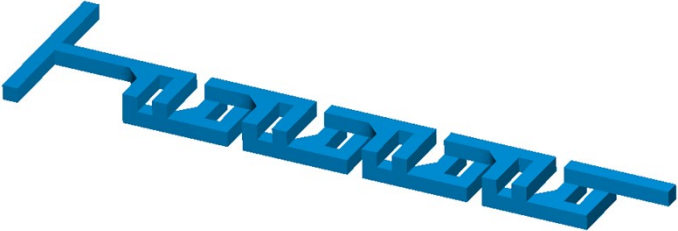


Instructions: Please answer the questions to the best of your knowledge without using notes/aids, Once you are finished, please rate in the right margin your confidence in your answer with 1 being least confident and 5 being most confident

Questions	Confidence in Answer (1, least to 5, most)
1. How does fluid move and mix at the microscale in comparison to the macroscale?	
2. Here is an image of a 3d microfluidic mixer. How does it increase mixing efficiency? 	
3. Using the 3d image of the microfluidic mixer, please draw the individual layers needed to create this device.	
4. How are liquid droplets created in microfluidics?	

Instructions: Please answer the questions to the best of your knowledge without using notes/aids, Once you are finished, please rate in the right margin your confidence in your answer with 1 being least confident and 5 being most confident

Questions	Confidence in Answer (1, least to 5, most)
5. Can you draw a top view and cross section of a structure likely to create droplets?	
6. What is a microfluidic valve and how is it controlled?	
7. Can you draw a top view and cross section of a microfluidic valve using 2 fluidic channels? (Multiple layers are ok)	
8. How do air bubbles affect the operation of a microfluidic?	

Instructions: Please answer the questions to the best of your knowledge without using notes/aids, Once you are finished, please rate in the right margin your confidence in your answer with 1 being least confident and 5 being most confident

<b>Questions</b>	<b>Confidence in Answer (1, least to 5, most)</b>
9. What are tolerances and why are they important in manufacturing microfluidics?	