Electronic Supplementary Material (ESI) for Soft Matter.

Supplementary Information

Rail configuration for lateral particle transport across intact co-flows: Effect of wall and rail geometry on liquid and particle transport

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Below, supplementary figures mentioned in the main text are presented: Figures 1S to 5S.

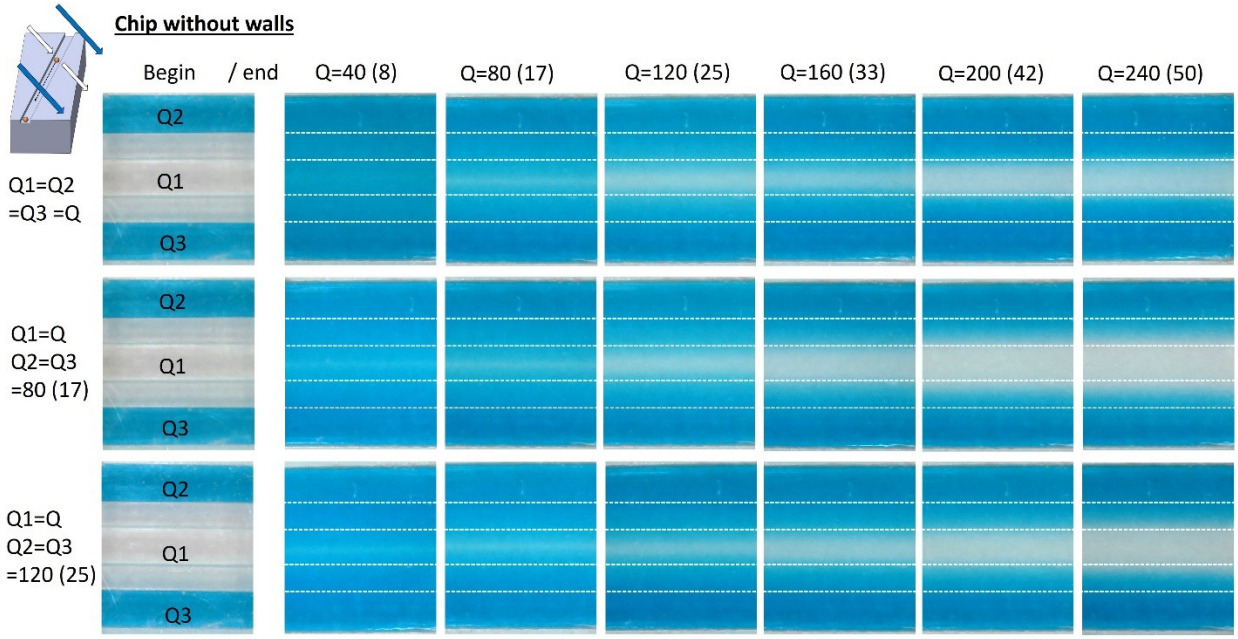

Figure 1S. Images recorded at the start (first column) and end (rest) of the chip without walls. For all columns the liquid flow rate Q is indicated at the top of the column in mL/h and the corresponding liquid velocity is indicated in brackets in mm/s. Each row represents a different set of experiment. Top row: all three liquids were introduced in the chip at the equal flow rate Q1 = Q2 = Q3 = Q. Middle row: side liquids were introduced at the flow rate Q2 = Q3 = 80 mL/h and velocity 17 mm/s. The middle liquid was introduced at a liquid flow rate Q. Bottom row: side liquids were introduced at the flow rate Q2 = Q3 = 120 mL/h and velocity 25 mm/s. White, intermittent lines indicate the area that is excluded for calculations of difference in color intensity at the beginning and the end of the chip because for each point enclosed in that area (in the pictures of the final part of the chip end) the beginning reference is a wall. The width of all channels combined is 4 mm.

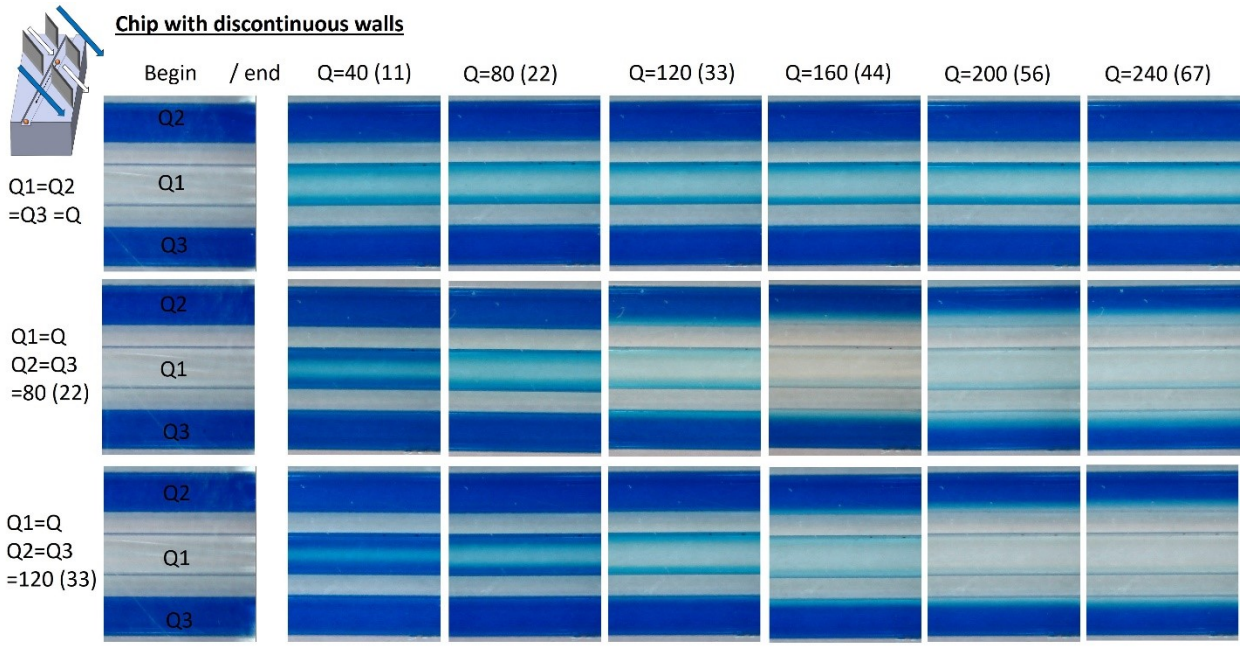

Figure 2S. Images recorded at the start (first column) and end (rest) of the chip with discontinuous walls. For all columns the liquid flow rate Q is indicated at the top of the column in mL/h and the corresponding liquid velocity is indicated in brackets in mm/s. Each row represents a different set of experiment. Top row: all three liquids were introduced in the chip at the equal flow rate Q1 = Q2 = Q3 = Q. Middle row: side liquids were introduced at a flow rate Q2 = Q3 = 80 mL/h and a velocity 22 mm/s. The middle liquid was introduced at a liquid flow rate Q. Bottom row: side liquids were introduced at the flow rate Q2=Q3=120 mL/h and velocity 33 mm/s. The width of all channels combined is 4 mm.

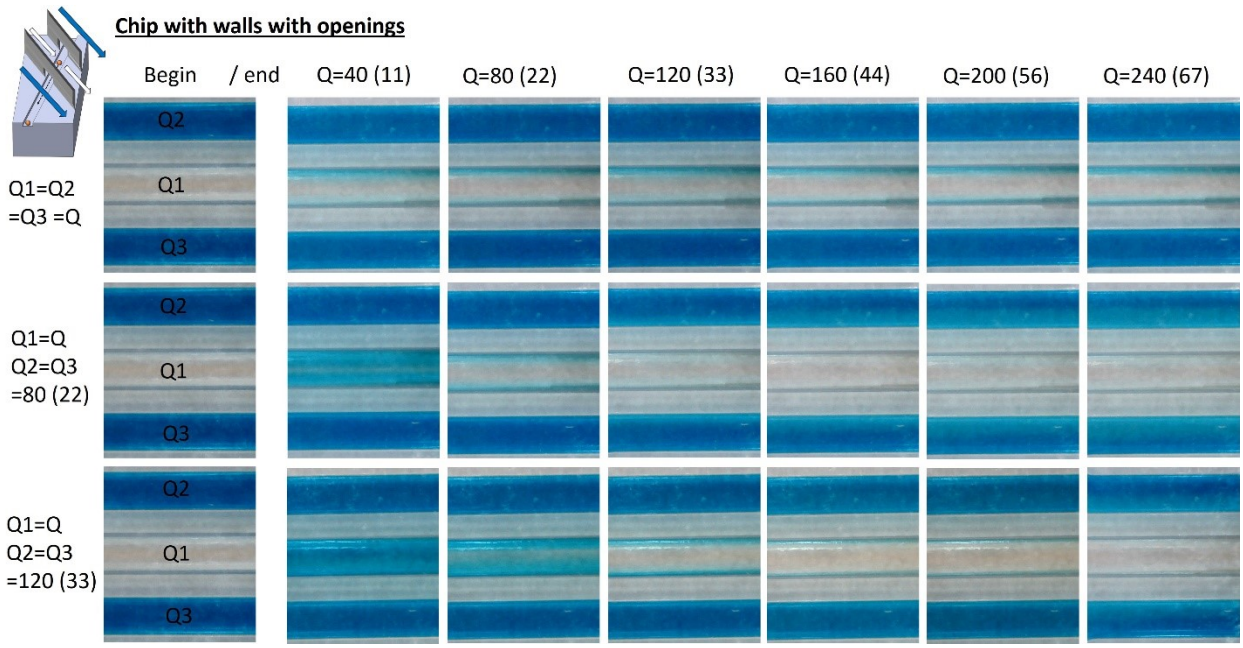

Figure 3S. Images recorded at the initial part (first column) and end (rest) of the chip with walls with openings. For all columns the liquid flow rate Q is indicated at the top of the column in mL/h and corresponding to it the liquid velocity is indicated in brackets in mm/s. Each row represents a different set of experiment. Top row: all three liquids were introduced in the chip at the equal flow rate Q1 = Q2 = Q3 = Q. Middle row: side liquids were introduced at the flow rate Q2 = Q3 = 80 mL/h and velocity 22 mm/s. The middle liquid was introduced at a liquid flow rate Q. Bottom row: side liquids were introduced at a flow rate Q2 = Q3 = 120 mL/h and a velocity equal to 33 mm/s. The width of all channels combined is 4 mm.

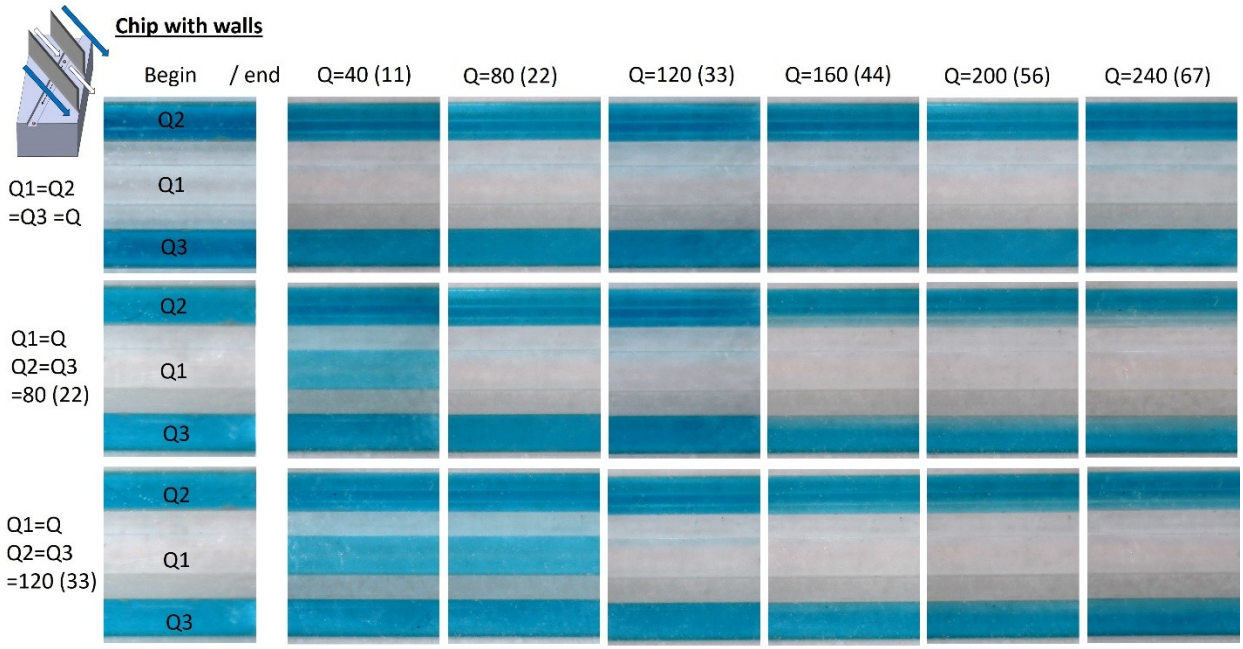

Figure 4S. Images recorded at the beginning (first column) and end (rest) of the chip with walls. For all columns the liquid flow rate Q is indicated at the top of the column in mL/h and corresponding to it the liquid velocity is indicated in brackets in mm/s. Each row represents a different set of experiment. Top row: all three liquids were introduced in the chip at the equal flow rate Q1=Q2=Q3=Q. Middle row: side liquids were introduced at a flow rate Q2=Q3=80 mL/h and velocity 22 mm/s. The middle liquid was introduced at a liquid flow rate Q. Bottom row: side liquids were introduced at the flow rate Q2=Q3=120 mL/h and velocity 33 mm/s. The width of all channels combined is 4 mm.

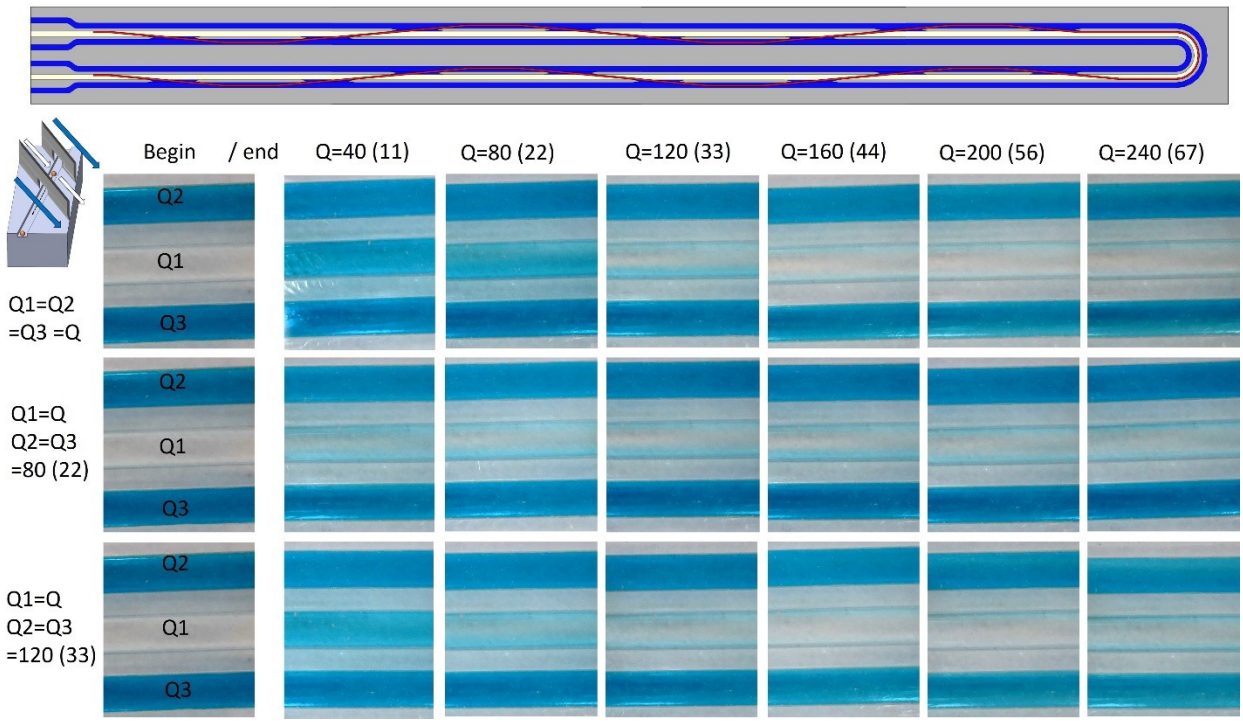

Figure 5S. Images recorded at the beginning (first column) and end (rest) of the chip with turn and with walls with openings. For all columns the liquid flow rate Q is indicated at the top of the column in mL/h and corresponding to it the liquid velocity is indicated in brackets in mm/s. Each row represents a different set of experiment. Top row: all three liquids were introduced in the chip at equal flow rate Q1 = Q2 = Q3 = Q. Middle row: side liquids were introduced at a flow rate Q2 = Q3 = 80 mL/h and a velocity of 22 mm/s. The middle liquid was introduced at a liquid flow rate Q. Bottom row: side liquids were introduced with a flow rate Q2 = Q3 = 120 mL/h and a velocity of 33 mm/s. The width of all channels combined is 4 mm.