

Supplementary Material (ESI) for Lab on a Chip
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Electronic Supplementary Information

Hydrodynamic Filtration for On-chip Particle Concentration and Classification Utilizing Microfluidics

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Figure S-3. Design and dimensions of Type 3 microdevice.

Table S-1. Length of the narrow segments in each side channel and the ratio a , in Type 1 microdevice. L1~L50 corresponds to those in Fig. S-1, respectively.

Channel	Length (μm)	a	Channel	Length (μm)	a
Outlet 3, 5		0.0522	L25	4348	0.0117
Outlet 2, 6		0.0305	L26	4454	0.0117
Outlet 1, 7		0.0241	L27	4557	0.0117
L1	1072	0.0122	L28	4659	0.0117
L2	1242	0.0121	L29	4758	0.0116
L3	1408	0.0121	L30	4856	0.0116
L4	1571	0.0121	L31	4951	0.0116
L5	1731	0.0121	L32	5045	0.0116
L6	1888	0.0120	L33	5137	0.0116
L7	2042	0.0120	L34	5227	0.0116
L8	2193	0.0120	L35	5316	0.0116
L9	2341	0.0120	L36	5402	0.0116
L10	2486	0.0120	L37	5487	0.0115
L11	2628	0.0119	L38	5570	0.0115
L12	2767	0.0119	L39	5652	0.0115
L13	2904	0.0119	L40	5732	0.0115
L14	3038	0.0119	L41	5811	0.0115
L15	3169	0.0119	L42	5887	0.0115
L16	3298	0.0118	L43	5963	0.0115
L17	3424	0.0118	L44	6037	0.0115
L18	3548	0.0118	L45	6109	0.0115
L19	3669	0.0118	L46	6180	0.0115
L20	3788	0.0118	L47	6250	0.0115
L21	3904	0.0118	L48	6318	0.0114
L22	4019	0.0117	L49	6385	0.0114
L23	4131	0.0117	L50	6451	0.0114
L24	4241	0.0117			

Table S-2. Length of the narrow segments in each side channel and the ratio a , in Type 2 microdevice. L1~L80 corresponds to those in Fig. S-2, respectively.

Channel	Length (μm)	a	Channel	Length (μm)	a	Channel	Length (μm)	a
Outlet 3, 5		0.1025	L26	13222	0.0092	L54	20011	0.0098
Outlet 2, 6		0.0782	L27	13534	0.0092	L55	20190	0.0098
Outlet 1, 7		0.0251	L28	13841	0.0093	L56	20366	0.0098
L1	3003	0.0063	L29	14142	0.0093	L57	20539	0.0098
L2	3517	0.0065	L30	14436	0.0094	L58	20708	0.0098
L3	4020	0.0068	L31	14725	0.0094	L59	20874	0.0098
L4	4513	0.0070	L32	15009	0.0094	L60	21037	0.0098
L5	4996	0.0072	L33	15286	0.0095	L61	21197	0.0099
L6	5470	0.0074	L34	15559	0.0095	L62	21353	0.0099
L7	5935	0.0076	L35	15825	0.0095	L63	21506	0.0099
L8	6391	0.0077	L36	16087	0.0095	L64	21657	0.0099
L9	6837	0.0079	L37	16344	0.0096	L65	21804	0.0099
L10	7275	0.0080	L38	16595	0.0096	L66	21948	0.0099
L11	7705	0.0081	L39	16842	0.0096	L67	22090	0.0099
L12	8126	0.0082	L40	17084	0.0096	L68	22229	0.0099
L13	8538	0.0083	L41	17321	0.0096	L69	22365	0.0099
L14	8943	0.0084	L42	17553	0.0097	L70	22499	0.0099
L15	9340	0.0085	L43	17781	0.0097	L71	22629	0.0099
L16	9728	0.0086	L44	18004	0.0097	L72	22758	0.0099
L17	10110	0.0087	L45	18223	0.0097	L73	22884	0.0099
L18	10483	0.0088	L46	18438	0.0097	L74	23007	0.0099
L19	10850	0.0088	L47	18648	0.0097	L75	23128	0.0099
L20	11209	0.0089	L48	18855	0.0097	L76	23246	0.0099
L21	11561	0.0090	L49	19057	0.0097	L77	23362	0.0099
L22	11907	0.0090	L50	19255	0.0098	L78	23476	0.0099
L23	12245	0.0091	L51	19450	0.0098	L79	23588	0.0099
L24	12577	0.0091	L52	19641	0.0098	L80	23698	0.0099
L25	12903	0.0092	L53	19827	0.0098			

Table S-3. Length of the narrow segments in each side channel and the ratio a , in Type 3 microdevice. L1~L30 corresponds to those in Fig. S-3, respectively.

Channel	Length (μm)	a	Channel	Length (μm)	a
Outlet 1, 3		0.2	L16	3706	0.0173
L1	638	0.0400	L17	3811	0.0173
L2	970	0.0323	L18	3908	0.0172
L3	1278	0.0278	L19	3998	0.0172
L4	1562	0.0249	L20	4081	0.0172
L5	1826	0.0229	L21	4158	0.0172
L6	2069	0.0215	L22	4229	0.0172
L7	2295	0.0204	L23	4295	0.0172
L8	2505	0.0196	L24	4356	0.0172
L9	2698	0.0190	L25	4412	0.0173
L10	2878	0.0185	L26	4465	0.0173
L11	3044	0.0182	L27	4513	0.0174
L12	3197	0.0179	L28	4558	0.0174
L13	3340	0.0177	L29	4600	0.0174
L14	3471	0.0175	L30	4638	0.0175
L15	3593	0.0174			

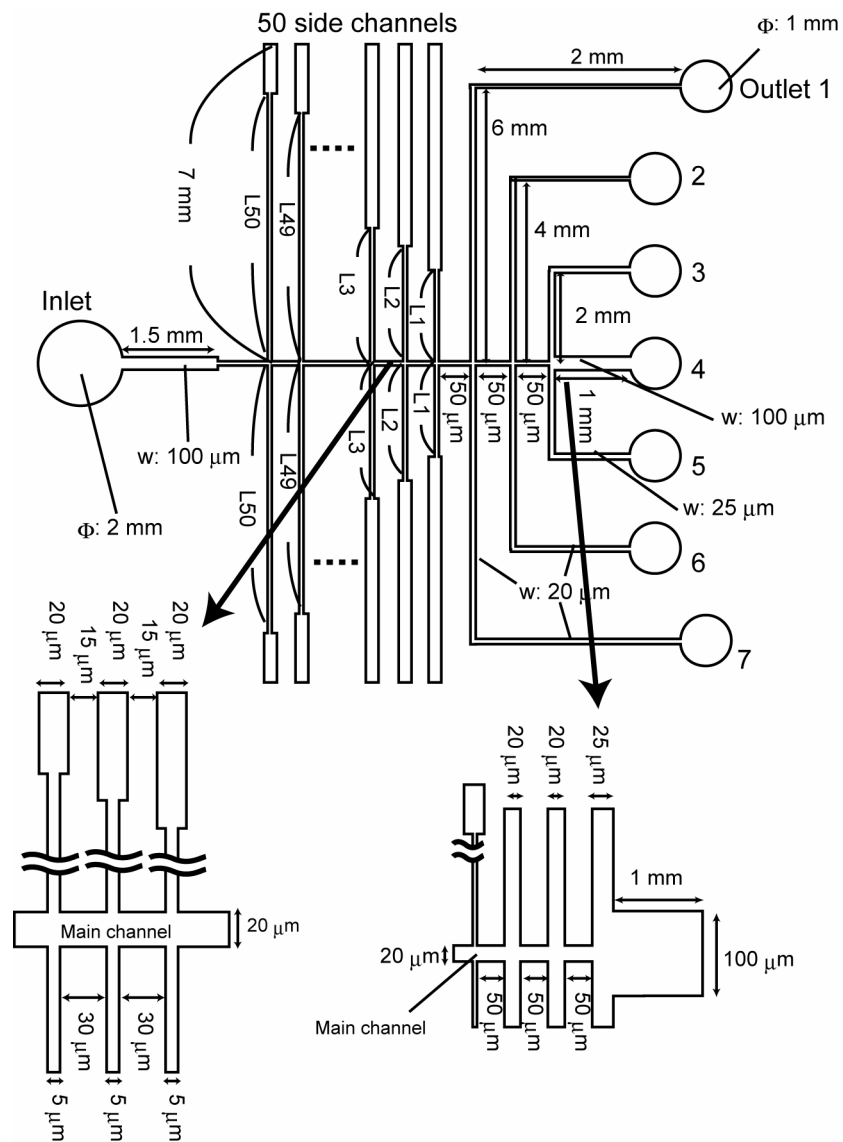


Figure S-1. Design and dimensions of Type 1 microdevice (not to scale).

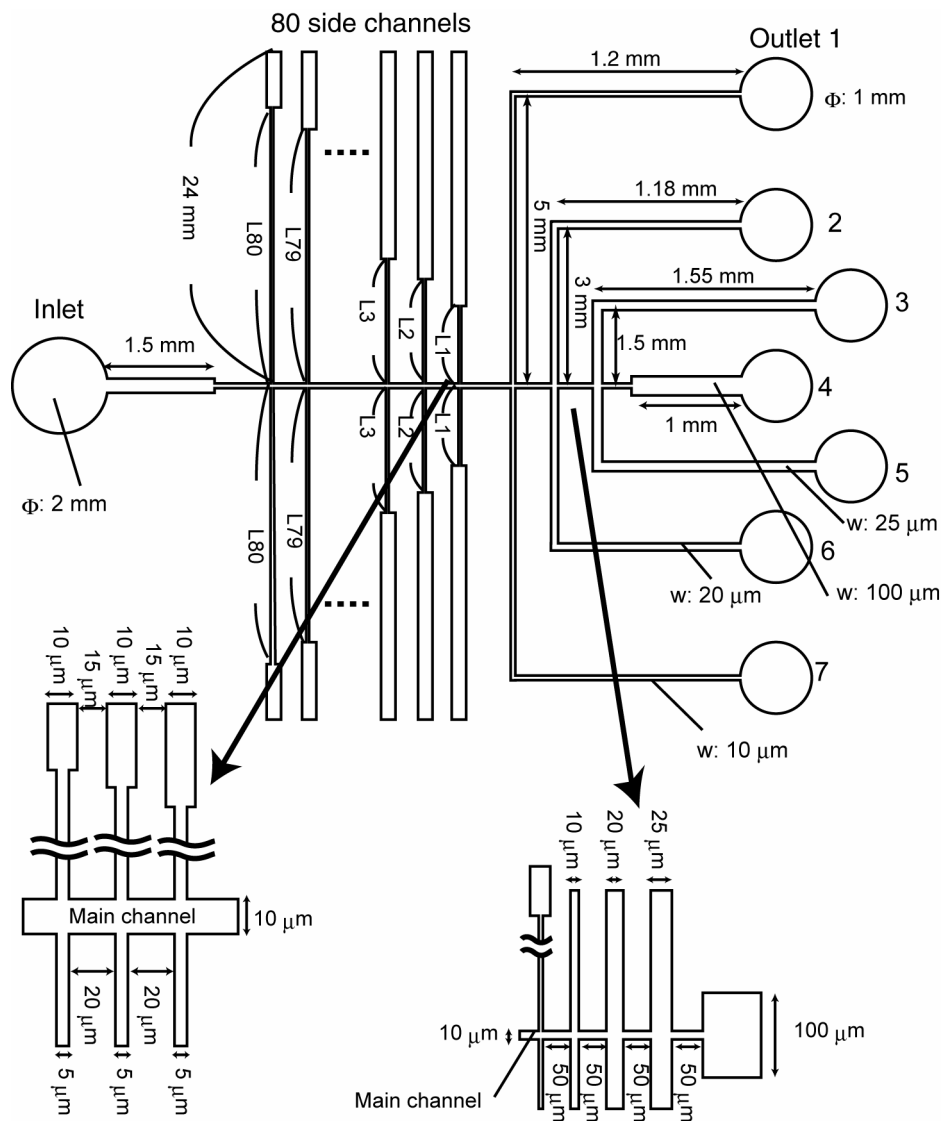


Figure S-2. Design and dimensions of Type 2 microdevice (not to scale).

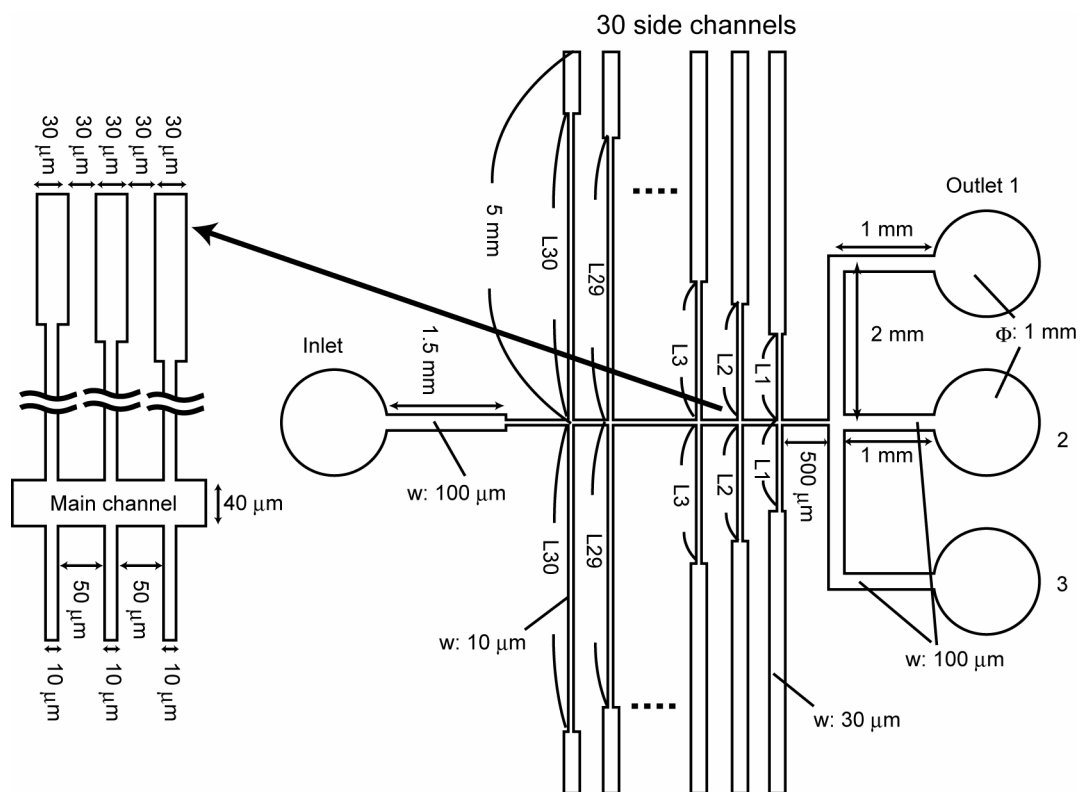


Figure S-3. Design and dimensions of Type 3 microdevice (not to scale).