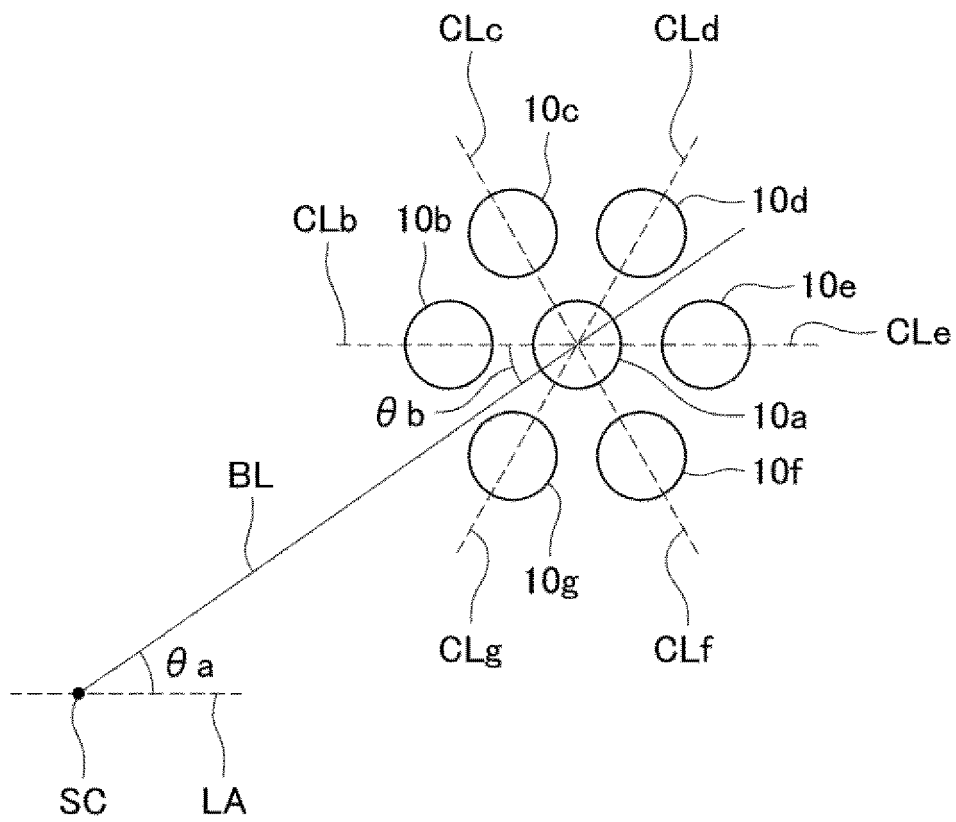
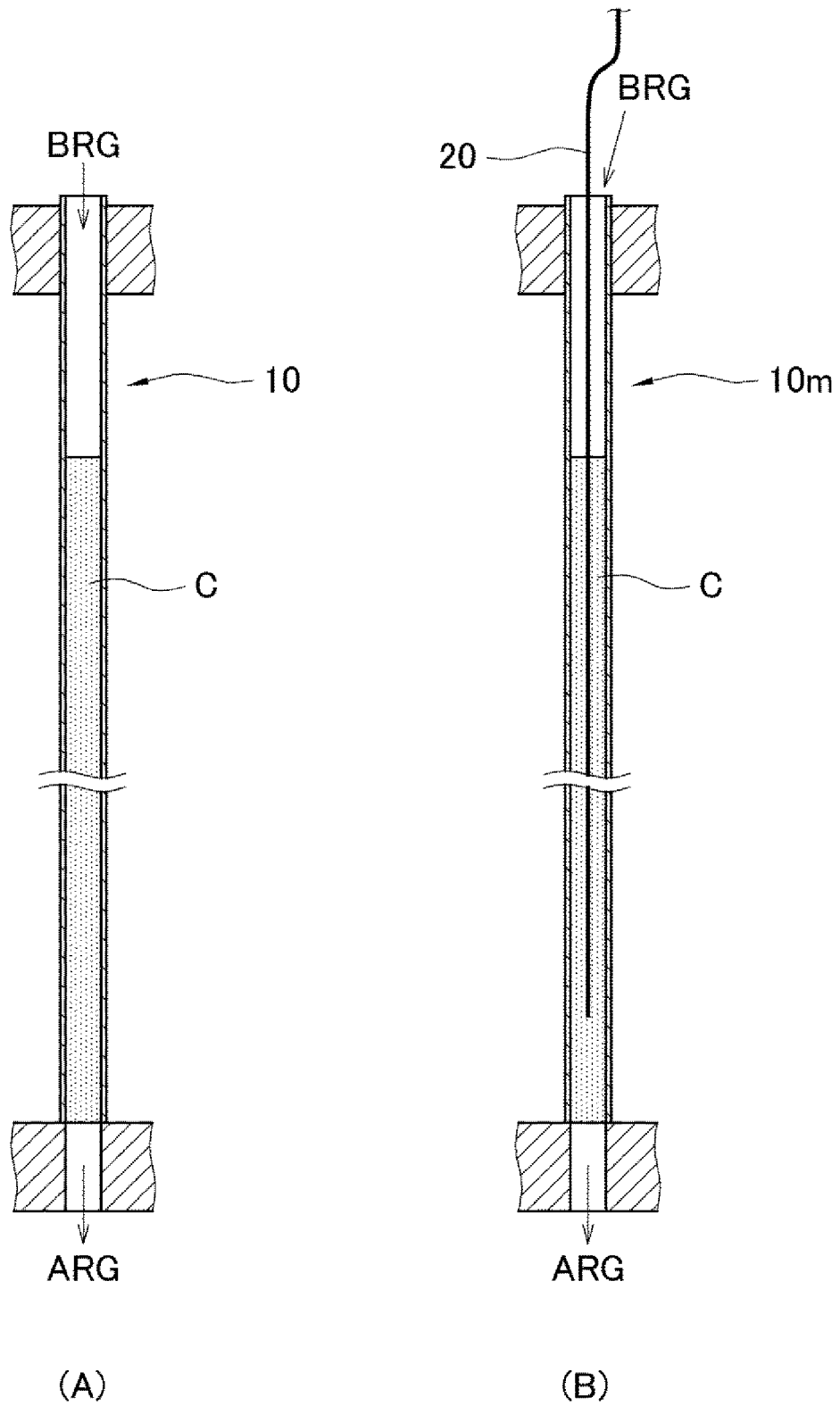


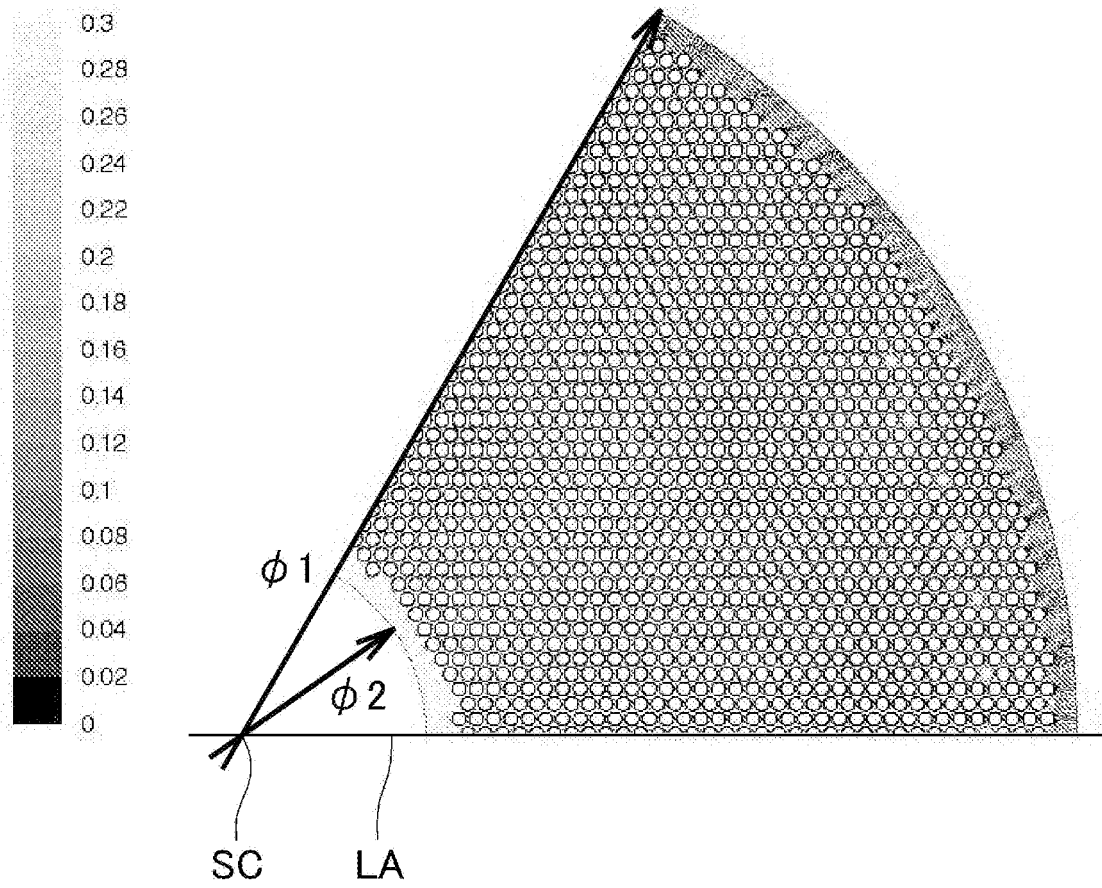
[図1]



[図3]

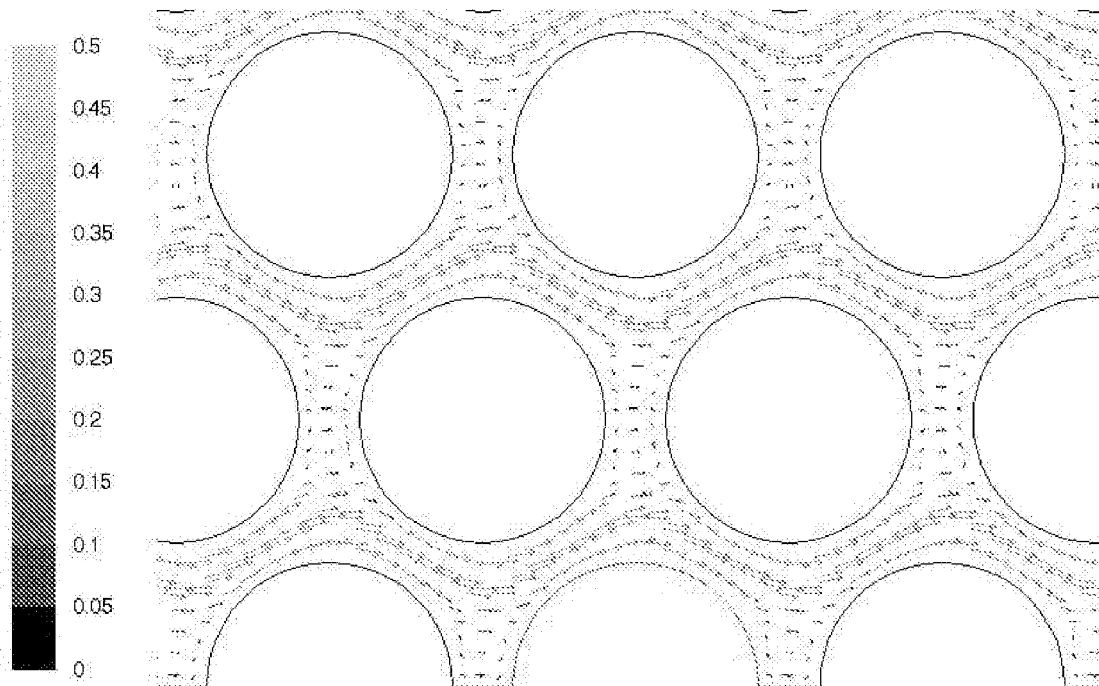


[図4]



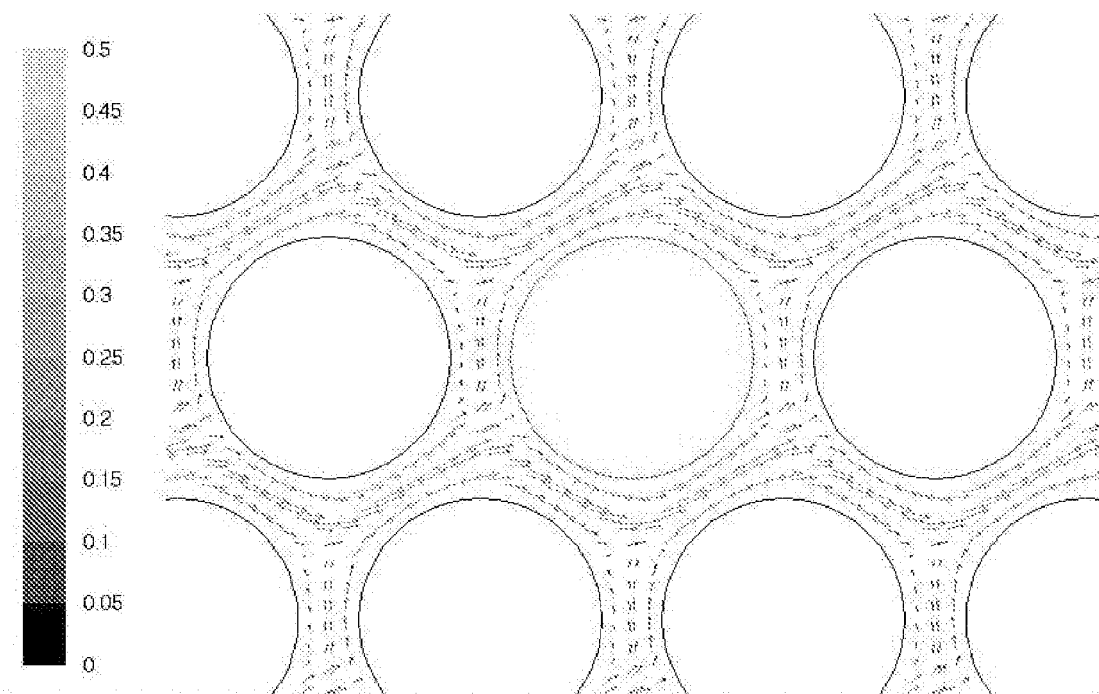
[図5]

0度での流動状態



(A)

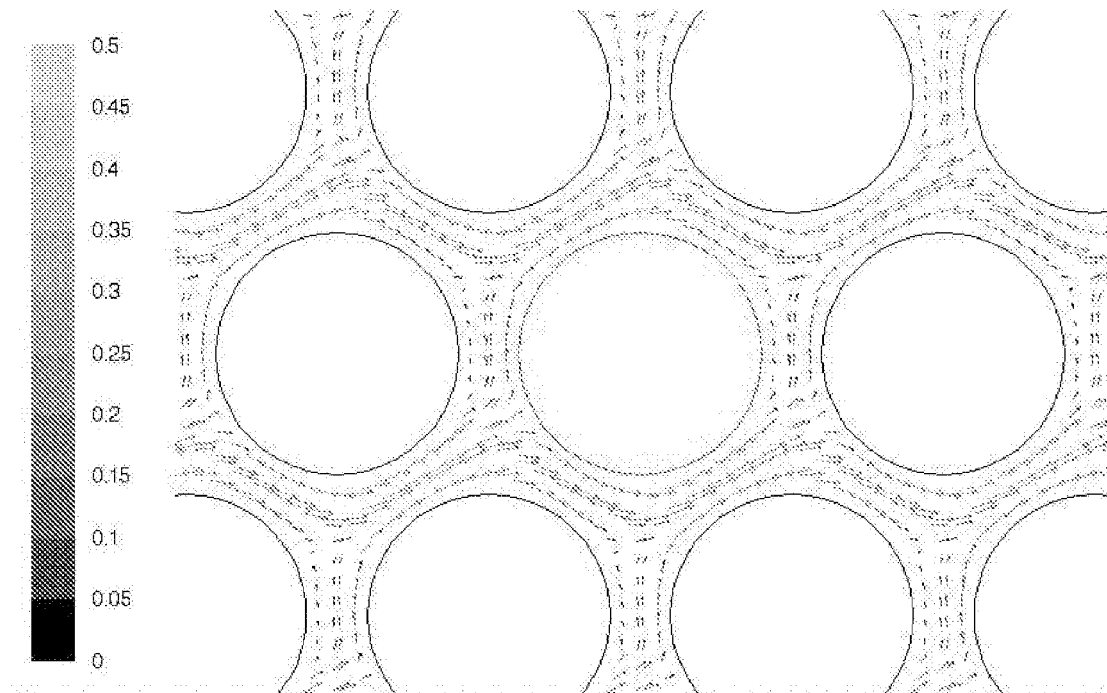
10度での流動状態



(B)

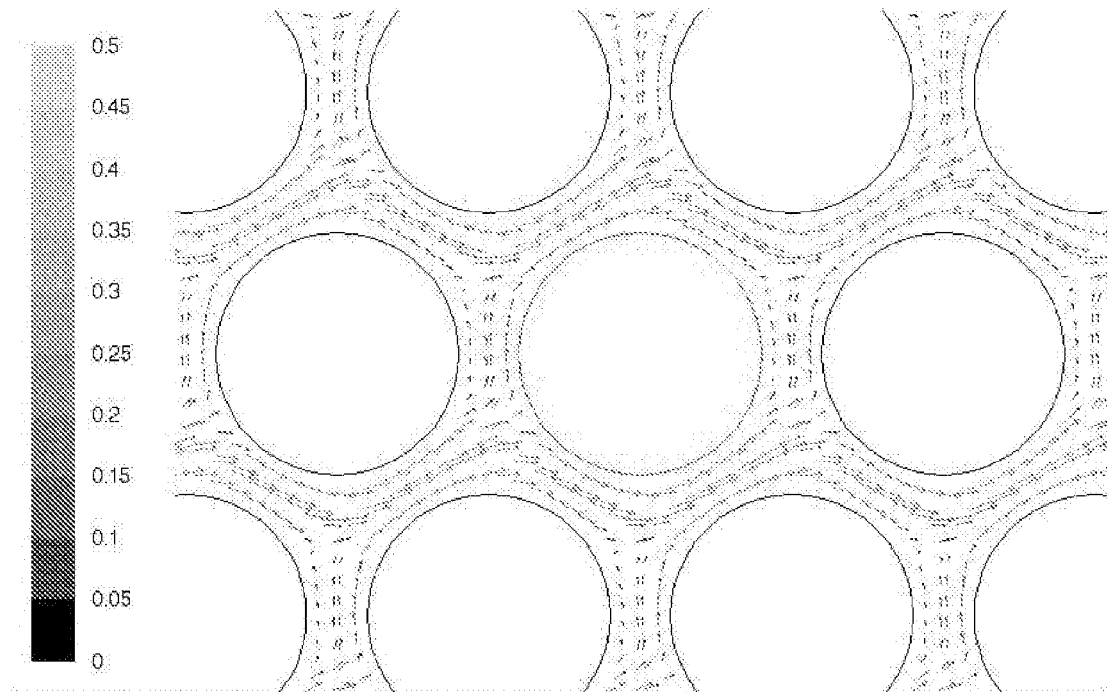
[図6]

20度での流動状態



(A)

30度での流動状態



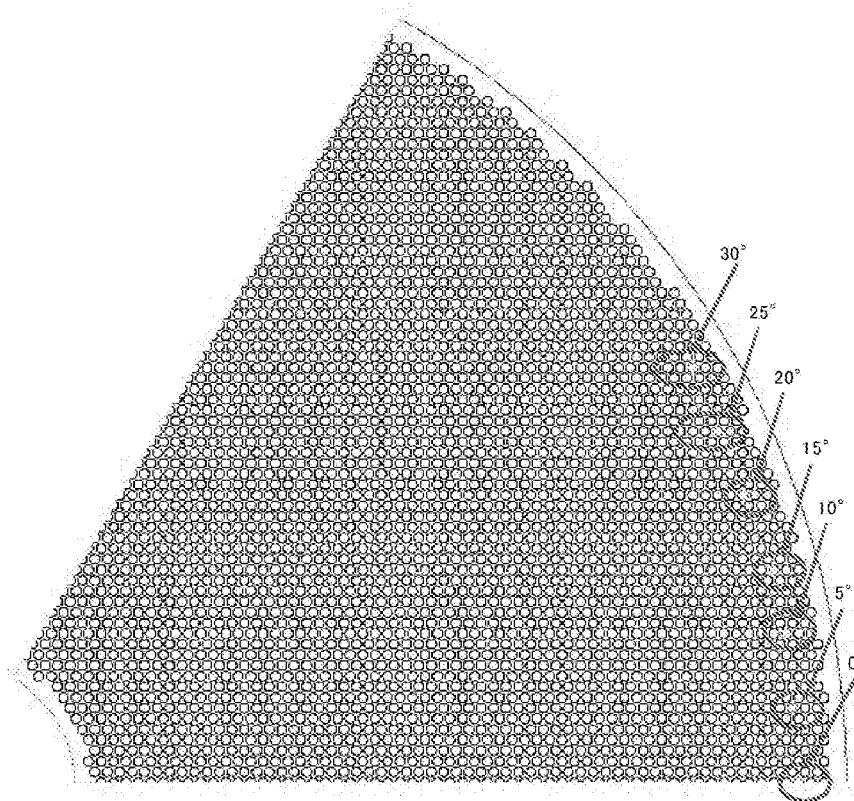
(B)

[図7]

管外境膜伝熱係数の変化(単位:W/(m²・K))

角度	熱媒流量/反応管数(m ³ /本)			改善率(%)		
	0.2	0.3	0.4	0.2	0.3	0.4
0	1670.1	1849.2	2123.9	100.0	100.0	100.0
5	1665	1840.4	2123.2	99.7	99.5	100.0
10	1667.8	1853.6	2155.3	99.9	100.2	101.5
15	1690.5	1888.5	2194.8	101.2	102.1	103.3
20	1716.2	1915.6	2237.6	102.8	103.6	105.4
25	1734.7	1960.1	2280.8	103.9	106.0	107.4
30	1743.1	1970.2	2282	104.4	106.5	107.4

(A)



(B)