

振動誘起流れによる卵子の搬送と機械的特徴量計測



NAGOYA UNIVERSITY

○学 中原 康 正 佐久間 臣 耶 正 早川 健 正 新井 史 人
名古屋大学大学院工学研究科マイクロ・ナノシステム工学専攻



ポンプを使わないマイクロ流体チップの在り方

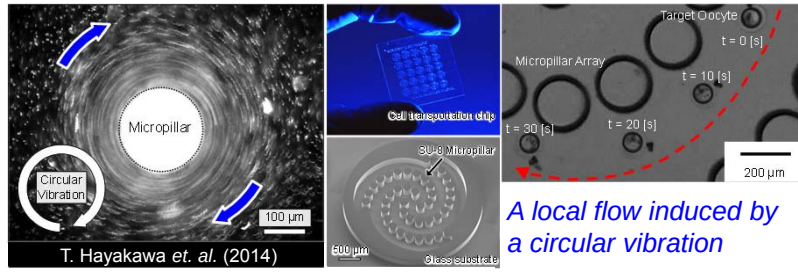
On-chip mechanical characterization

Robot-integrated microfluidic chip



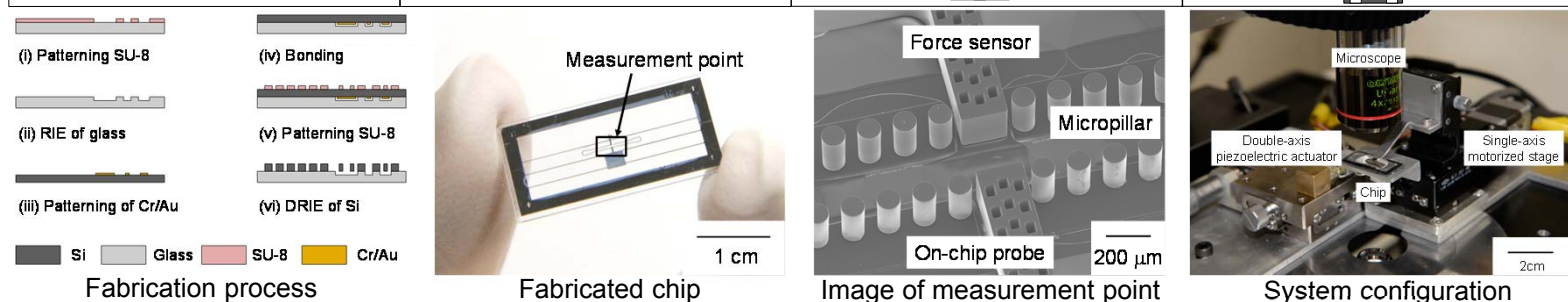
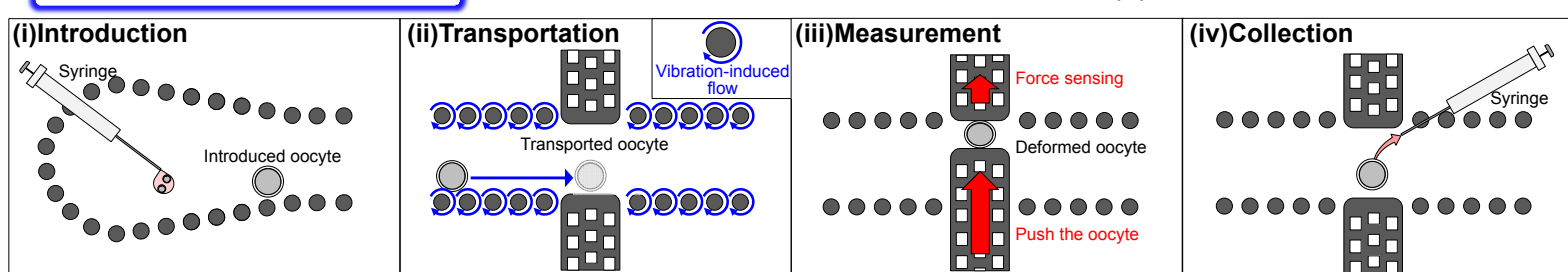
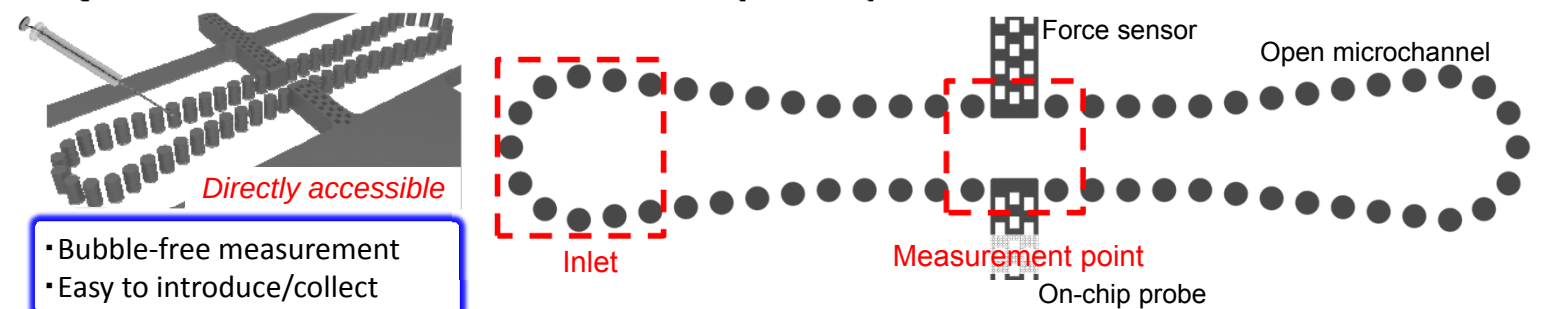
Pump-free transportation

Vibration-induced flow



Transportation and measurement in an open environment

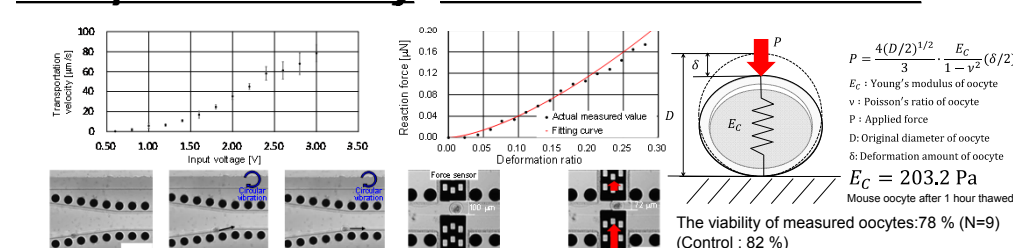
Oocyte mechanical characterization with open-chip



Experiment

Conclusion

Transportation velocity Mechanical characterization



1. We proposed a system that transports oocytes and measures their mechanical characteristics with open-chip.
2. 78 % of the measured oocytes were alive (the viability of the control samples were 82 %)

Reference

Nakahara K, Sakuma S, Hayakawa T, and Arai F. "On-chip transportation and measurement of mechanical characteristics of oocytes in an open environment" Micromachines 6.6 (2015): 648-659

Contact person : Kou Nakahara
E-mail: nakahara@biorobotics.mech.nagoya-u.ac.jp,
URL: http://www.biorobotics.mech.nagoya-u.ac.jp/
TEL: 052-789-5026, FAX : 052-789-5027

Acknowledgements :
本研究は科学研究費(15K13909)の支援をうけて行われたものです。

