

Antoine RIAUD

Antoine Riaud, PhD

Research Gate

LinkedIn Profile

EDUCATION

Sep 2013 – Oct 2016

PhD Student, Pierre and Marie Curie University - Paris 6, Institut des nanosciences de Paris (INSP) - UMR 7588, Paris, France

Sep 2011 – Aug 2013

Master's Student, Tsinghua University, Department of Chemical Engineering, Beijing, China

Sep 2009 – Jun 2011

Student, École Centrale de Lille, Département Ingénierie, Lille, France

THESIS

Pressure fluctuations during emulsification in microfluidic T-junctions: experiments and simulations (Master Thesis)

Study of the potentialities offered by the synthesis of complex surface acoustic wave fields: focus on fluid actuation and contactless manipulation (PhD Thesis)

AWARDS & GRANTS

Sep 2011 – Jun 2013

Outstanding Master thesis dissertation award, Tsinghua University

SKILLS & ACTIVITIES

Skills

Droplet Microfluidics, Surface Acoustic Waves, Numerical Modeling, Wave Propagation, Acoustics, Piezoelectricity, Ultrasonics, Microfabrication

Languages

Chinese, English, French, Spanish

PUBLICATIONS

Antoine Riaud, Michael Baudoin, Olivier Bou Matar, Loic Becerra, Jean-Louis Thomas : **Selective manipulation of microscopic particles with swirling Rayleigh waves.** *Submitted.*

Antoine Riaud, Michael Baudoin, Oliver Bou Matar, Jean-Louis Thomas, Philippe Brunet: **Influence of viscosity on acoustic streaming in sessile droplets: an experimental and a numerical study with a Streaming Source Spatial Filtering (SSSF) method.** *Submitted.*

Antoine Riaud, Michael Baudoin, Jean-Louis Thomas, Olivier Bou Matar: **On-chip generation of acoustical vortices with swirling surface acoustic waves for single particle manipulation and vorticity control.** The Journal of the Acoustical Society of America 04/2016; 139(4). DOI:10.1121/1.4950145

Antoine Riaud, Michael Baudoin, Jean-Louis Thomas, Olivier Bou Matar: **SAW synthesis with IDTs array and the inverse filter: toward a versatile SAW toolbox for microfluidics and biological applications.** IEEE Transactions on Ultrasonics Ferroelectrics and Frequency Control 01/2016; DOI:10.1109/TUFFC.2016.2558583

Antoine Riaud, Jean-Louis Thomas, Eric Charron, Adrien Bussonnière, Olivier Bou Matar, Michael Baudoin: **Anisotropic Swirling Surface Acoustic Waves from Inverse Filtering for On-Chip Generation of Acoustic Vortices.** Physical Review Applied 09/2015; 4(3). DOI:10.1103/PhysRevApplied.4.034004

Antoine Riaud, Jean-Louis Thomas, Michael Baudoin, Olivier Bou Matar: **Taming the degeneration of Bessel beams at anisotropic-isotropic interface: toward 3D control of confined vortical waves.** Physical Review E 08/2015; 92(6). DOI:10.1103/PhysRevE.92.063201

Antoine Riaud, Jean-Louis Thomas, Eric Charron, Adrien Bussonnière, Olivier Bou Matar: **Synthesis of anisotropic swirling surface acoustic waves by inverse filter, towards integrated generators of acoustical vortices.**

Shufang Zhao, Antoine Riaud, Guangsheng Luo, Yong Jin, Yi Cheng: **Simulation of liquid mixing inside micro-droplets by a lattice Boltzmann method.** Chemical Engineering Science 04/2015; 131. DOI:10.1016/j.ces.2015.03.066

Xueying Wang, Kai Wang, Antoine Riaud, Xi Wang, Guangsheng Luo: **Experimental study of liquid/liquid second-dispersion process in constrictive microchannels.** The Chemical Engineering Journal 10/2014; 254. DOI:10.1016/j.cej.2014.05.135

Antoine Riaud, Michael Baudoin, Jean-Louis Thomas, Olivier Bou Matar: **Cyclones and attractive streaming generated by acoustical vortices.** Physical Review E 07/2014; 90. DOI:10.1103/PhysRevE.90.013008

Antoine Riaud, Shufang Zhao, Kai Wang, Yi Cheng, Guangsheng Luo: **Lattice-Boltzmann method for the simulation of multiphase mass transfer and reaction of dilute species.** Physical Review E 05/2014; 89(5-1). DOI:10.1103/PhysRevE.89.053308

Xueying Wang, Antoine Riaud, Kai Wang, Guangsheng Luo: **Pressure drop-based determination of dynamic interfacial tension of droplet generation process in T-junction microchannel.** Microfluidics and Nanofluidics 03/2014; 18(3). DOI:10.1007/s10404-014-1449-0

J. S. Zhang, A. Riaud, K. Wang, Y. C. Lu, G. S. Luo: **Beckmann Rearrangement of Cyclohexanone Oxime to -Caprolactam in a Modified Catalytic System of Trifluoroacetic Acid.** Catalysis Letters 01/2014; 144(1).

DOI:10.1007/s10562-013-1114-3

Antoine Riaud, Chris P. Tostado, Kai Wang, Guangsheng Luo: ***A facile pressure drop measurement system and its applications to gas–liquid microflows.*** Microfluidics and Nanofluidics 11/2013; 15(5). DOI:10.1007/s10404-013-1174-0

Antoine Riaud, Kai Wang, Guangsheng Luo: ***A combined Lattice-Boltzmann method for the simulation of two-phase flows in microchannel.*** Chemical Engineering Science 08/2013; Volume 99, Pages 238–249