

## 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