

# Ilyesse BIHI

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## CURRENT INTERESTS AND RESEARCH AREAS

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1. Platelets production in vitro using microfluidic bioreactors.
2. Stability of liquid-liquid interfaces in presence of microparticles and pattern formation.
3. Dynamics and rheology of spheroidal particles (e.g. bacteria, platelets).
4. Co-flow of two miscible liquids in a microfluidic system.
5. Vibration of cylindrical armoured bubbles.
6. Detachment of spores (bacteria) from surfaces in the food industry.

## EDUCATION

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DEC 2016 PhD in CHEMICAL ENGINEERING, **University of Florida**, Gainesville, FL, USA  
SEP 2016 PhD in MICRO AND NANO TECHNOLOGY **Lille University**, Lille, FRANCE  
JULY 2012 MSc in FLUID MECHANICS **Lille University**, Lille, FRANCE  
JULY 2009 BSc in FUNDAMENTAL PHYSICS **Faculty of Science**, Rabat, MOROCCO

## RELEVANT EXPERIENCE

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DEC2016-PRESENT	Post-Doctoral Researcher, Compiègne, FRANCE <i>Biomechanics and Bioengineering Laboratory UMR CNRS 7338</i> <ul style="list-style-type: none"><li>- Design and fabrication of microfluidic systems for platelets production.</li><li>- Characterization of platelets formation using microfluidic devices.</li></ul>
OCT2012 - DEC2016	PhD Candidate, Gainesville, FL, USA <i>University of Florida</i> <ul style="list-style-type: none"><li>-Developed a numerical code BEM (Boundary element method), elucidating the motion of a spheroid particle near to a wall.</li></ul>
OCT2012 - DEC2016	PhD Candidate, Lille, FRANCE <i>Institut d'Electronique Microelectronique et Nanotechnologie CNRS 8520</i> <ul style="list-style-type: none"><li>-Determined the conditions to detach the micro-organisms efficiently from a surface using liquid interfaces.</li><li>-Designed and build a couple of experimental devices.</li><li>-Identified a new interfacial instability due to microparticles presence.</li></ul>
OCT2013 - JULY2016	Teaching Assistant, Villeneuve d'Ascq, FRANCE <i>Lille University</i> <p>Taught mechanical engineering for undergraduate and graduate student (320 hours/ 6 courses).</p>
FEB2012 - JULY2012	Research Assistant, Villeneuve d'Ascq, FRANCE <i>Institut National de Recherche Agronomique</i> <ul style="list-style-type: none"><li>-Investigated the effect of drying conditions on the removal of biological spores from surfaces.</li></ul>

## TECHNICAL STRENGTHS

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PROGRAMMING	Matlab, ImageJ(Fiji), Maple, C, Python
TECHNIQUES	Cell Culture, cytometry, clean Room : "lythography & surface treatment", fabrication of microfluidic lab-on-Chip, microscopy, high speed imaging.
SOFTWARES	ImageJ, Fluent, Gerris, Catia, Autocad
LANGUAGES	French, English, Arabic, Italian (Beginner)

## AWARDS AND DISTINCTIONS

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- 2017 **Pierre ISOARD 2017 Award** given by ASPEC in Contamin-Expo (Paris) for my research work on the particulate, biological and chemical contamination field.
- 2017 Qualification for Associate Professorship (**Qualification aux fonctions de maitre de conférences**) by the National Council of Universities, France: Sections 60,62,28
- 2016 **Travel grant** for the 24th ICTAM "International Congress of Theoretical and Applied Mechanics", 21-26 August 2016, Montréal, CANADA.
- 2015 **Regional finalist** at the three minute thesis competition (North of France).
- 2014 **International mobility scholarship** from Lille university to study abroad (USA).
- 2012 **Ministerial grant** from the French Ministry for Education and Research for PhD research (3 years).
- 2010 **Second Prize** at the National Competition of Robotics 2010 (FSR-Rabat) for creating a line follower robot.

## LEADERSHIP AND SUPERVISION

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- 2018 Supervision of 5 engineering students for different research projects.
- 2017 Member of the organizing committee of the 7th ICCB conference.
- 2016 Supervision of Master student for a research project.
- 2015 Creation of a PhD students association- CADoc.
- 2014 Member of the organizing committee of the JNRDM seminar.
- 2012 President of Lille university Chess Club.
- 2010 Project manager of a humanitarian project-SIFE-UH2C association.
- 2009 Supervision of ten high school students for the creation of a Solar Oven.

## COMMUNICATION

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### Publications

- G. Prabhudesai, **I. Bihi**, F. Zoueshtiagh, J. Jose and M. Baudoin, "Nonspherical armoured bubble vibration", **Soft Matter**, 13: 3879 (2017)
- **I. Bihi**, M. Baudoin, J.E. Butler, C. Faille, F. Zoueshtiagh, "Inverse Saffman-Taylor experiments with particles lead to capillary driven fingering instabilities", **Phys. Rev. Lett.**, 117: 034501 (2016)
- C. Faille, **I. Bihi**, A. Ronse, G. Ronse, T. Bénézech, F. Zoueshtiagh, "Impact of drying conditions of a contaminated surface on the subsequent resistance to detachment of adherent microspheres and Bacillus spores" **Colloids and Surfaces B: Biointerfaces** 143 (2016) 293-300

### Media coverage

- "Plaquettes sanguines : une fabrication en laboratoire pour ne plus dépendre des dons", Echoscience Feb 2018.
- "Les vraies fausses histoires du sang et du coeur", radio interview, Graf'hit Oct 2018.
- "La vie, on l'a dans le sang",radio interview, Graf'hit Oct 2017.

### Conference Presentations

- Ilyesse Bihi et al. “Megacaryocyte elongation and platelets production in a microfluidic bioreactor”, **WCB- 8th World Congress of Biomechanics- 8-18 July 2018, Dublin, Ireland**
- Ilyesse Bihi et al. “Motion of freely spheroidal particle near a wall”, **ICCB-7th International Conference on Computational Bioengineering – 6-8 September 2017, Compiègne, France**
- Ilyesse Bihi et al. “Stability of an air-water interface in presence of microparticles”, **Miro-Mast 2016 First International Conference on Multiscale Applications of Surface tension- 5-8 September 2016, Brussels, Belgium.**
- Ilyesse Bihi et al. “Microparticles effects on the stability of an air-water interface”, **ICTAM- International Congress of Theoretical and Applied Mechanics- 21-26 August 2016, Montreal- Canada.**
- Ilyesse Bihi et al. “Formation of interfacial patterns due to micro-particles presence”, **IMA8 – 8th Conference of the International Marangoni Association- 12-16 June 2016, Bad Honnef, Germany.**
- Ilyesse Bihi et al. “Micro-particle detachment from surfaces”, **15th I2 plus Seminar- 10 August 2015, Tokyo, Japan**
- Ilyesse Bihi et al “Micro-particle detachment from surfaces”, **PHC-Sakura Symposium, 19 October 2015, IEMN- Villeneuve-d’Ascq, France.**

### Other

- Ilyesse Bihi et al “Pressure-driven flow focusing of two miscible liquids”, **Journée de la matière condensée- 27-31 August 2017, Grenoble, France.**
- Ilyesse Bihi et al “Micro-particle detachment from surfaces”, **NSF-PIRE (National Science Foundation- Partnerships for International Research and Education) graduate seminar, 20 November 2014, Uni. Floride, Gainesville, USA.**
- Ilyesse Bihi, et al. “Micro-particle detachment from surfaces by fluid-fluid interface” **University of Florida’s Graduate Association of Chemical Engineers 15th Annual Symposium 10 April 2014, Gainesville, FL, USA.**
- Ilyesse Bihi et al., “Micro-particles detachment from surfaces by fluid- fluid interface”, **Workshop on Fluid Patterns for Science and Technology, 30 March -02 April 2014, Gainesville, FL, USA.**
- Ilyesse Bihi et al., “Décrochage des Micro-particules par interfaces (air-liquide)”, **Journée d’accueil des nouveaux doctorants, 6 December 2013, IEMN- Villeneuve-d’Ascq, France.**
- Ilyesse Bihi et al., “Décrochage des Micro-particules par interfaces (air-liquide)”, **Journée des doctorants, 28 June 2013, Valenciennes, France.**
- Ilyesse Bihi et al., “Décrochage des micro-organismes adhérant aux parois d’un micro-canal par bulles”, **9e Congrès National de la Société Française de Microbiologie, 7-8 February 2013, Lille, France.**

### INTERESTS AND ACTIVITIES

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Technology, Programming, Experimental setups, Machine learning  
Biography of inspirational people, Psychoanalysis  
Hiking, Travel, Chess

## REFERENCES

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