

Curriculum Vitae

PERSONAL INFORMATION

Family name, First name: **Kristiawan, Magdalena**

Date of birth: July 10, 1979

Nationality: Indonesian



• EDUCATION

2003-2006 **PhD in Chemical Engineering**

University of La Rochelle, FRANCE

Graduated with highest honour: “Very honourable with congratulation of jury”

Name of PhD Supervisor : Prof. Karim ALLAF & Prof. Vaclav SOBOLIK

2002-2003 **Master of Science (DEA) in Chemical Engineering**

Engineering school: ENSIACET (Institut National Polytechnique de Toulouse), FRANCE

Graduated with rank 9/25, GPA 12.60 / 20

• CURRENT POSITION(S)

2012–present **Researcher (‘Chargée de recherche’)**

Biopolymers Interactions Assemblies (BIA) Unit, French National Institute for Agronomic Research (INRA), FRANCE

• PREVIOUS POSITIONS

2011 – 2012 **Invited researcher**

LEPTIAB laboratory & Process Eng. Dept., University of La Rochelle, FRANCE

2010 – 2011 **Research and teaching assistant (‘ATER’)**

Process Engineering Department, University of La Rochelle, France

2010 **Research fellow (Post-Doc)**, funded by grant of ‘French National Research Agency’ - ANR BLANC-CPARTOUT)

LEPTIAB laboratory, University of La Rochelle, France

2009 – 2010 **Research fellow (Post-Doc)**, funded by grant of ‘French National Research Agency’- ANR 07-CP2D

IMRCP laboratory (University of Paul Sabatier) & LFC-R laboratory (University of Pau), France

2008 – 2009 **Research fellow (Post-Doc)**

LEPTIAB laboratory, University of La Rochelle, France

2007 – 2008 **Researcher & lecturer**

Chemical Engineering Department, University of Surabaya, Indonesia

2007 – 2008 **Scientific consultant & representative of a French agro-food company (ABCAR DIC Process SAS)**, for Indonesian territory

• FELLOWSHIPS

2012 – 2013 **Humboldt Research Fellowship** for Experienced Researchers at University of Erlangen (Germany)

“Cancellation” due to my nomination as permanent researcher at INRA (France) in 2012

2008 – 2009 **Postdoctoral fellowship** from region of Poitou-Charentes (France)

2003 – 2006 **PhD scholarship** from French government & European project: Innovation & SME – DIC Extract

- **SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS**

- 2016–present** 2 master students & co-supervision of 1 PhD student at INRA, France
2010 – 2012 Co-supervision of 2 PhD students at LEPTIAB laboratory, University of La Rochelle, France
2008 1 master student at LEPTIAB laboratory, University of La Rochelle, France
2005 1 master student at LEPTIAB laboratory, University of La Rochelle, France

- **TEACHING ACTIVITIES**

- 2016–present** **Researcher at INRA (France)** – development of teaching module for online course in Modeling & Simulation of Agricultural & Food Processing: Extrusion cooking
2010 – 2012 **Invited researcher & Teaching assistant (ATER) at University of La Rochelle (France)** – Autocad (lab), Chemical reactor (lecture), Materials resistance (lab), Numerical analysis (lab), Simulation of process engineering by PRO/II (lab), Simulation of mass transfer (Absorption, Distillation, Extraction) by PRO/II (lab), Technical drawing (lab), Thermodynamics (Lab), Water treatment (lecture)
2010 – 2012 **Lecturer at University of Surabaya (Indonesia)** – Unit operation (lab)

- **RESEARCH ACTIVITIES**

- 2012-present** **Rheology and modelling of structuring and destructuring of starchy foods**
Modelling scope: Food expansion by extrusion, Relation between multi-scale structure and functional properties (texture, shape memory, chewing performance, digestibility)
Modelling approach: Phenomenology and Finite Elements methods, multi-scale and multiphysics modelling
2010-present **Fluid mechanics & Mass transfer using electrodiffusion method**
a) Experimental study of instabilities in the Couette-Taylor-Poiseuille flow
b) Wall shear rate and mass transfer in impinging jet
2008 – 2009 **Physical chemistry of microemulsions**
2003 – 2008 **Separation process:** Extraction of essential oils and Texturing-Drying of fruits & vegetables by Instantaneous Controlled Pressure Drop DIC

- **INSTITUTIONAL RESPONSIBILITIES**

- 2015–present** Responsible of IT infrastructure of research group at BIA-INRA (France)
2012–present Demonstration of simulation of twin-screw extrusion (Ludovic[®] software) for various publics (science party, ...) at INRA (France)

- **COMMISSIONS OF TRUST**

- 2016–present** Reviewer for “International Food Research Journal” and “ Journal of Cereal Science”

- **MEMBERSHIPS OF SCIENTIFIC SOCIETIES**

- 2013–present** Member of ‘Groupe Français de Rheology’

- **MAJOR COLLABORATIONS**

INRA Project (AIC Protex): Coupling phenomenological model of expansion with mechanical model of starchy products extrusion

Amadou Ndiaye (I2M-INRA, France), **Bruno Vergnes** (Mines Paris Tech CEMEF, France), & **Chantal David** (Sciences Computers Consultants SCC, France).

INRA project (AIC QualExp): A modelling approach to develop high-protein extruded snacks, using legume (pulse) flours

Adéline Boire & Jacques Gueguen (BIA-INRA), **Valérie Micard** (IATE-INRA), **Christian Salles** (CSGA-INRA), **Sylvie Chevallier** (ONIRIS, France), & **Azad Emin** (Karlsruhe Institute of Technology , Germany)

Early achievements track-record

A. Scientific journal (peer review)

- A1. **Kristiawan, M. (Corresponding author)**, Chaunier, L., Della Valle, G., Ndiaye, A., Vergnes, B. (2016). Modeling of starchy melts expansion by extrusion. *Trends in Food Science and Technology*, 48, 13-26. Web of science® Times Cited : 1
- A2. **Kristiawan, M. (Corresponding author)**, Chaunier, L., Della Valle, G., Lourdin, D., Guessasma, S. (2016). Linear viscoelastic properties of extruded amorphous potato starch as a function of temperature and moisture content. *Rheologica Acta*, 55 (7), 597-611.
- A3. Mahloul, M. (**Corresponding author**), Mahamdia, A., **Kristiawan, M.** (2016). Experimental investigations of the spherical Taylor-Couette flow. *Journal of Applied Fluid Mechanics*, 9 (1), 131-137.
- A4. Mahloul, M. (**Corresponding author**), Mahamdia, A., **Kristiawan, M.** (2016). The spherical Taylor-Couette flow. *European Journal of Mechanics - B/Fluids*, 59, 1-6.
- A5. **Kristiawan, M.**, Sadjavi, K., Montagné, B., Meslem, A. (**Corresponding author**), Sobolik, V. (**Post-Doc supervisor**) (2015). Mass transfer and shear rate on a wall normal to an impinging circular jet. *Chemical Engineering Science*, 132, 32-45.
- A6. Sadjavi, K., Montagné, B., Bragança, P., Meslem, A. (**Corresponding author**), Bode, F., **Kristiawan, M.** (2015). Impinging cross-shaped submerged jet on a flat plate: a comparison of plane and hemispherical orifice nozzles. *Meccanica*, 1-21. Web of science® Times Cited : 1
- A7. **Kristiawan, M.**, Meslem, A., Nastase, I. (**Corresponding author**), Sobolik, V. (**Post-Doc supervisor**) (2012). Wall shear rates and mass transfer in impinging jets: Comparison of circular convergent and cross-shaped orifice nozzles. *International Journal of Heat and Mass Transfer*, 55 (1-3), 282-293. Web of science® Times Cited : 16
- A8. **Kristiawan, M. (Corresponding author)**, Jirout, T., Sobolik, V. (**Post-Doc supervisor**) (2011). Components of wall shear rate in wavy Taylor-Couette flow. *Experimental Thermal and Fluid Science*, 35 (7), 1304-1312. Web of science® Times Cited : 3
- A9. **Kristiawan, M. (Corresponding author)**, Sobolik, V., Klíma, L., Allaf, K. (**Post-Doc supervisor**) (2011). Effect of expansion by instantaneous controlled pressure drop on dielectric properties of fruits and vegetables. *Journal of Food Engineering*, 102 (4), 361-368. Web of science® Times Cited : 12
- A10. Sobolik, V. (**Corresponding author, Post-Doc supervisor**), Jirout, T., Havlica, J., **Kristiawan, M.** (2011). Wall shear rates in Taylor vortex flow. *Journal of Applied Fluid Mechanics*, 4 (2), 25-31. Web of science® Times Cited : 7

B. Conference proceeding (peer review)

- B1. **Kristiawan, M. (Corresponding author)**, Della Valle, G., Kansou, K., Ndiaye, A., Vergnes, B. (2016). Phenomenological model of maize starches expansion by extrusion. Presented at 19th International ESAFORM Conference on Material Forming, Nantes, France (April 27-29, 2016). Oral communication
- B2. **Kristiawan, M.**, El Faye, A. (**co-first author**), Mahloul, M., Mahamdia, A., Sobolik, V. (**Corresponding author, Post-Doc supervisor**). Variety of flow regimes in Taylor-Couette-Poiseuille flow. Presented at 18. International Couette-Taylor Workshop - ICTW 2013, Enschede, Netherlands (June 24-26, 2013).

C. Invited speaker

- C1. **Kristiawan, M. (Speaker)**, Della Valle, G., Kansou, K., Ndiaye, A., Vergnes, B. (Collaborateur), David, C. (2015). Modelling starch expansion by twin screw extrusion. Presented at Ludovic Club 2015, Lyon, FRA (March 4, 2015).
- C2. **Kristiawan, M. (Speaker)**, Della Valle, G. (Co-Speaker) (2014). Analysis of the expansion phenomenon during the extrusion process: Experiments and model. Presented at Ludovic Club 2014, Lyon, FRA (March 26, 2014).