

Kristianto Tjiptowidjojo

Curriculum Vitae

PERSONAL DETAILS

Address 1001 University Blvd SE Suite 103, Albuquerque, NM
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EDUCATION

Ph.D. Chemical Engineering 2004 - 2009
University of Minnesota, Minneapolis, MN
Thesis title: Low flow limits in slide coating
Advisor: L. E. Scriven and Marcio S. Carvalho.

BSc. with honors and distinction Chemical Engineering 1999 - 2004
Purdue University, West Lafayette, IN

WORK EXPERIENCE

Research Assistant Professor 2013-present
University of New Mexico, Albuquerque, NM

- Developing and maintaining Goma 6.0., a Sandia National Laboratories multiphysics finite element software. Responsibilities include maintaining and adding capabilities, updating documentation, and conducting training.
- Managing research group. Responsibilities include supervising postdoc and graduate students, and managing groups finance.
- Performing independent and collaborative research in fields of fluid dynamics, structural mechanics, rheology, heat transfer, and reaction kinetics.
- Co-taught graduate level transport phenomena class.

Postdoctoral Associate 2012-2013
University of Minnesota, Minneapolis, MN

- Developed capability of coupling between two multiphysics softwares for realistic simulation of crystal growth process.

Postdoctoral Fellow 2009-2012
University of New Mexico, Albuquerque, NM

- Performed computational fluid dynamics (CFD) in areas of microelectronics, energy, and complex fluids.
- Mentored undergraduate and graduate students in computer-aided engineering.

Research Assistant 2004-2009
University of Minnesota, Minneapolis, MN

- Mapped operability windows of slide coating via theory and experiments.

- Developed computational models of slide coating.
- Co-organizer and lecturer of finite element seminar series.
- Served as teaching assistant in graduate-level fluid mechanics, coating process fundamentals, and numerical method courses.

Co-op Student

2002-2002

Vantage Oleochemicals (then Uniqema), Chicago, IL

- Studied feasibility of employing steam-stripping process for removing odor from glycerine
- Established and implemented standard operating procedures for measuring fat, oil, and grease (FOG) content in the plant's wastewater.

Co-op Student

2001-2001

Vantage Oleochemicals (then Uniqema), Chicago, IL

- Validated the use of NIR spectroscopy as a wet chemical test replacement for measuring acid value of oleochemicals.
- Investigated and characterized unwanted carbon particles in distilled glycerine

PUBLICATIONS

1. Richard M. Martin, Kristianto Tjiptowidjojo, Weston Ortiz, and Rekha R. Rao. Finite element simulations of viscoelastic flow of blade coating using the log-conformation tensor. *Computers & Fluids*, In Press
2. Andrew Cochrane, Kristianto Tjiptowidjojo, and P. Randall Schunk. Multiphase model of nanoimprint lithography. *Int. J. Multiph. Flow*, 104:9–19, 2018. <https://doi.org/10.1016/j.ijmultiphaseflow.2018.03.014>
3. Kristianto Tjiptowidjojo, Daniel S. Hariprasad, and P. Randall Schunk. Effect of blade-tip shape on the doctoring step in gravure printing processes. *J. Coat. Technol. Res.*, 15:983–992, 2018b. <https://doi.org/10.1007/s11998-017-0029-0>
4. Daniel S. Hariprasad, Gerd Grau, P. Randall Schunk, and Kristianto Tjiptowidjojo. A computational model for doctoring fluid films in gravure printing. *J. Appl. Phys.*, 119:135303, 2016. <https://doi.org/10.1063/1.4945030>
5. Nathan W. Moore, Kristianto Tjiptowidjojo, and P. Randall Schunk. Notes on hydrophilicity and the viscosity of interfacial water. *Langmuir*, 27:3211–3212, 2011. <https://doi.org/10.1021/la2000427>
6. Kristianto Tjiptowidjojo and Marcio S. Carvalho. Operability limits of slide coating. *Chem. Eng. Sci.*, 66:5077–5583, 2011. <https://doi.org/10.1016/j.ces.2011.06.066>
7. Kristianto Tjiptowidjojo and Marcio S. Carvalho. Viscocapillary model of slide coating: Effect of operating parameters and range of validity. *AIChE J.*, 55:2491–2505, 2009. <https://doi.org/10.1002/aic.11843>
8. Nicole M. Dingle, Kristianto Tjiptowidjojo, Osman A. Basaran, and Michael T. Harris. A finite element based algorithm for determining interfacial tension from pendant drop profiles. *J. Coll. Int. Sci.*, 286:647–660, 2005. <https://doi.org/10.1016/j.jcis.2005.01.052>

PRESENTATIONS

1. Kristianto Tjiptowidjojo, Daniel S. Hariprasad, and P. Randall Schunk. Effect of blade-tip shape on the doctoring step in gravure printing processes. In *International Society of Coating Science and Technology Symposium*, September 2018a. Long Beach, CA
2. Kristianto Tjiptowidjojo, Rekha R. Rao, Christine C. Roberts, and Amy K. Kaczmarowski. Encapsulation and porous imbibition models of curing epoxy. In *Society of Rheology Annual Meeting*, October 2017. Denver, CO
3. Kristianto Tjiptowidjojo and P. Randall Schunk. Structural mechanics of roll-to-roll nanoimprint lithography. In *International Society of Coating Science and Technology Symposium*, September 2014. San Diego, CA
4. Kristianto Tjiptowidjojo, Darren R. Dunphy, C. Jeffrey Brinker, and P. Randall Schunk. Dynamics of discontinuous coating and drying of nanoparticulate films. In *American Institute of Chemical Engineers Annual Meeting*, November 2010a. Salt Lake City, UT
5. Kristianto Tjiptowidjojo, Darren R. Dunphy, C. Jeffrey Brinker, and P. Randall Schunk. Dynamics of discontinuous coating and drying of nanoparticulate films. In *International Society of Coating Science and Technology Symposium*, September 2010b. Saint Paul, MN
6. Kristianto Tjiptowidjojo and Marcio S. Carvalho. Uncovering slide coating window with theoretical modeling. In *International Society of Coating Science and Technology Symposium*, September 2008. Marina del Rey, CA
7. Kristianto Tjiptowidjojo, Marcio S. Carvalho, and L. E. Scriven. Viscocapillary models of slide coating. In *International Society of Coating Science and Technology Symposium*, September 2006. Denver, CO

COMPUTER SKILLS

<i>Numerical methods</i>	Finite element method, finite difference method
<i>Programming</i>	C, Fortran
<i>Softwares</i>	Goma 6.0, Cubit/Trelis, ParaView, Tecplot, Matlab, L ^A T _E X

REFERENCES

Available upon request