

# CURRICULUM VITAE

18<sup>th</sup> September 2019



**Family name:** Hidema

**First name:** Ruri

**Affiliation:** Associate Professor, Kobe University

**Address (Office):** Department of Chemical Science and Engineering,  
Kobe University.  
1-1, Rokkodai, Nada, Kobe, Hyogo, Japan. 657-8501

**Tel:** +81-78-803-6657

**Fax:** +81-78-803-6657

**e-mail:** hidema@port.kobe-u.ac.jp

**Web:** <http://www2.kobe-u.ac.jp/~hidema/fluparlab/>

**Google Scholar:**

<https://scholar.google.co.jp/citations?user=J88VgUEAAAAJ&hl=ja>

**Publons:**

<https://publons.com/researcher/2278078/ruri-hidema/>

**ORCID:**

<https://orcid.org/0000-0002-0810-8820>

## Degrees and Education:

Bachelor of Agriculture	Mar. 2004	Tokyo University of Agriculture and Technology
Master of Agriculture	Mar. 2006	The Graduate School of Agriculture, Tokyo University of Agriculture and Technology
Exchange Ph.D Student	Sep.2007-Aug. 2008	Collège Doctoral Franco-Japonais (Government supported France-Japan exchange system for PhD students) PPSM, Ecole Normale Supérieure Cachan, France
Ph.D in Biochemistry and Biotechnology	Sep. 2010	The United Graduate School of Agricultural Science, Tokyo University of Agriculture and Technology

## Research and professional experience:

Oct. 2010 - Mar. 2012	Postdoctoral Fellow, Department of Mechanical Systems Engineering, Graduate School of Science and Engineering, Yamagata University. (Japan)
Apr. 2012 - Mar.2016	Assistant Professor, Organization of Advanced Science and Technology, Kobe University. (Japan)
Oct. 2015 - Mar.2016	Visiting Scholar, Department of Chemical Engineering, University of California, Berkeley. (USA)

Apr. 2016 - Sep.2016	Assistant Professor, Organization for Advanced and Integrated Research, Kobe University. (Japan)
Oct. 2016 - Jul.2019	Assistant Professor, Department of Chemical Science and Engineering, Kobe University. (Japan)
Aug. 2019 - present	Associate Professor, Department of Chemical Science and Engineering, Kobe University. (Japan)

#### **Membership of academic society:**

The Society of Rheology  
 American Institute of Chemical Engineers (AIChE)  
 American Physical Society (APS)  
 The Society of Rheology, Japan  
 The Society of Chemical Engineers, Japan  
 The Society of Polymer Science, Japan  
 Japanese Society of Mechanical Engineers  
 The Heat Transfer Society of Japan  
 Japanese Society of Latent Heat Engineers

#### **Award:**

- 2011 Japanese Society of Mechanical Engineers,  
Fluids Engineering Division,  
Excellent Oral Presentation Award on  
“Polymer effects on soap film turbulence as thin fluids layer composed of  
surfactants studied with Film Interference Flow Imaging”  
(12<sup>th</sup> September. 2011)
- 2014 The Society of Chemical Engineers, Japan,  
Fluid and Particle Processing Division,  
Incentive Award for Research on  
“Effects of Different Extensional Rate on Turbulent Drag Reduction of Polymers”  
(17<sup>th</sup> March. 2014)
- 2014 Polish Association of Theoretical and Applied Mechanics and  
Polish Pilot Centre of ERCOFTAC,  
XIII Professor J.W. Elsner’s Competition for the best paper  
in the field of fluid mechanics  
“Effects of Extensional Rates on Characteristics Scales of Two-Dimensional  
Turbulence in Polymer Solutions”  
(18<sup>th</sup> June. 2014)
- 2015 The Society of Chemical Engineers, Japan,  
Incentive Award for Research on  
“Effects of extension of polymers on turbulent drag reduction analyzed by Film  
Interference Flow Imaging”  
(15<sup>th</sup> March. 2015)

- 2015 AIP, APL Materials,  
APL Materials Poster Award at the 2015 International Conference on Nanospace Materials on  
“Elastic Instability of Biopolymer Solutions in Micro Abrupt Contraction-Expansion Channels”  
(25<sup>th</sup> June. 2015)
- 2016 An Academic Administrator of Kobe University,  
Young Researchers’ Award in 2015.  
(21<sup>st</sup> April. 2016)
- 2017 The Society of Rheology Japan,  
Incentive Award for Research on  
“Flow characteristics of dilute polymer solution and dilute surfactant solution”  
(18<sup>th</sup> May. 2017)
- 2017 SHISEIDO,  
Shiseido Female Researcher Science Grant.  
(7<sup>th</sup> July. 2017)
- 2018 Ministry of Education, Culture, Sports, Science and Technology,  
The Young Scientists’ Prize.  
(17<sup>th</sup> April. 2018)

### Doctor Thesis

“Development of Image Analysis Methods for Flowing Soap Films as a Two-Dimensional Turbulence and Analysis of the Effects of Polyethylene Oxide on the Flow”  
Submitted to Biochemistry and Biotechnology, United Graduate School of Agricultural Science,  
Tokyo University of Agriculture and Technology (2010. 9.)

### PAPER LIST

#### Journal Publications

1. Zenji Yatabe, Ruri Hidema, Chihiro Hashimoto, Robert Bernard Pansu, Hideharu Ushiki, “Size Evolution of Onion Structure under Oscillatory Shear Flow”, *Chemical Physics Letters*, 475, 101-104 (2009)
2. Ruri Hidema, Zenji Yatabe, Masahiko Shoji, Chihiro Hashimoto, Robert Pansu, Gabriel Sagarzazu, Hideharu Ushiki, “Image Analysis of Thickness in Flowing Soap Films. I: Effects of Polymer”, *Experiments in Fluids*, 49, 725-732 (2010)
3. Ruri Hidema, Taisuke Yoshizawa, Khairi Bin Nasaruddin, Hidemitsu Furukawa, “Self-Repairing Materials Created with Fiber-Reinforced Shape-Memory Gels”, *Transactions of the Japan Society of Mechanical Engineers, Series A*, 77, 764-768 (2011)  
日出間るり, 吉沢泰介, カイリビンナサルディン, 古川英光, “形状記憶ゲルの繊維強化による自己修復材料の創製”, *日本機械学会論文集A編*, 77, 764-768 (2011)
4. Ruri Hidema, Keiichi Sugita, Hidemitsu Furukawa, “3-Dimensional Freeform Fabrication of High-Strength Gels by Laser Scanning Irradiation”, *Transactions of the Japan Society of Mechanical Engineers, Series A*, 77, 1002-1006 (2011)  
日出間るり, 杉田恵一, 古川英光, “レーザー走査照射による高強度ゲルの 3 次元光造

形”, 日本機械学会論文集A編, 77, 1002-1006 (2011)

5. Ruri Hidema, Hideharu Ushiki, Hidemitsu Furukawa, “Polymer Effects on Turbulence in Flowing Soap Films Studied with Film Interference Flow Imaging Method”, *Journal of Solid Mechanics and Materials Engineering*, 5, 838-848 (2011)
6. Tomohiro Yokoo, Ruri Hidema, Hidemitsu Furukawa, “Novel Optical Devices Developed with High-Strength Gels”, *Journal of Solid Mechanics and Materials Engineering*, 5, 1015-1021 (2011)
7. Junko Kamiguri, Noriko Tsuchiya, Ruri Hidema, Masatoshi Tachibana, Zenji Yatabe, Masahiko Shoji, Chihiro Hashimoto, Robert Bernard Pansu, Hideharu Ushiki, “Contraction Behaviors of *Vorticella* sp. Stalk Investigated Using High-Speed Video Camera. I: Nucleation and Growth Model”, *Biophysics*, 8, 1-9 (2012)
8. Junko Kamiguri, Noriko Tsuchiya, Ruri Hidema, Zenji Yatabe, Masahiko Shoji, Chihiro Hashimoto, Robert Bernard Pansu, Hideharu Ushiki, “Contraction Behaviors of *Vorticella* sp. Stalk Investigated using High-Speed Video Camera. II: Viscosity Effect of Several Types of Polymer Additives”, *Biophysics*, 8, 11-19 (2012)
9. Go Takada, Ruri Hidema, Hidemitsu Furukawa, “Development of Ultrahigh Ductile Gels”, *Journal of Solid Mechanics and Materials Engineering*, 6, 169-177 (2012)
10. Go Takada, Ruri Hidema, Hidemitsu Furukawa, “Fiber Reinforced Gels with High Strength”, *Transactions of the Japan Society of Mechanical Engineers, Series A*, 78, 1120-1124 (2012)  
高田剛, 日出間るり, 古川英光, “繊維強化による高強度ゲルの開発”, 日本機械学会論文集A編, 78, 1120-1124 (2012)
11. Tomohiro Yokoo, Ruri Hidema, Hidemitsu Furukawa, “Smart Lenses Developed with High-Strength and Shape Memory Gels”, *e-Journal of Surface Science and Nanotechnology*, 10, 243-247 (2012)
12. Ruri Hidema, Hidemitsu Furukawa, “Development of Film Interference Flow Imaging Method (FIFI) Studying Polymer Stretching Effects on Thin Liquid Layer”, *e-Journal of Surface Science and Nanotechnology*, 10, 335-340 (2012)
13. Go Takada, Ruri Hidema, Hidemitsu Furukawa, “Ultrahigh Ductile Gels Having Inter-Crosslinking Network (ICN) Structure”, *e-Journal of Surface Science and Nanotechnology*, 10, 346-350 (2012)
14. Yoshitaka Amano, Ruri Hidema, Jin Gong, Hidemitsu Furukawa, “Creation of Shape-memory Gels with Inter-crosslinking Network Structure”, *Chemistry Letters*, 41, 1029-1031 (2012)
15. Sho Harada, Ruri Hidema, Jin Gong, Hidemitsu Furukawa, “Intelligent Button Developed Using Smart Soft and Wet Materials”, *Chemistry Letters*, 41, 1047-1049 (2012)
16. Ruri Hidema, Hiroshi Suzuki, Yoshiyuki Komoda, Hidemitsu Furukawa, “Extensional Viscosity of Semi-Dilute Polymer Solution Effect on Two-Dimensional Turbulence”, *International Journal of Transport Phenomena*, 13, 183-191 (2013)
17. Koji Masuda, Hiroshi Suzuki, Yoshiyuki Komoda, Ruri Hidema, “Particle Dispersion/Aggregation Model in a Non-Uniform Shear Flow”, *Nihon Reorogi Gakkaishi*, 41, 75-81 (2013)
18. Koki Yamamoto, Ruri Hidema, Gong Jin, Hidemitsu Furukawa, “Joule-Heat Control of Shape-Memory Gels with Conductivity”, *Transactions of the Japan Society of Mechanical Engineers, Series A*, 79, 512-516 (2013)  
山本晃己, 日出間るり, 宮瑾, 古川英光, “導電性を持つ形状記憶ゲルのジュール熱制御”, 日本機械学会論文集A版, 79, 512-516 (2013)

19. Ruri Hidema, Hiroshi Suzuki, Shingo Harada, Takahito Shiraki, Hidemitsu Furukawa, “Development of Extensional Viscosity Measurement Method on Low Viscos Polymer Solution with an Abrupt Contraction Flow”, *Transactions of the Japan Society of Mechanical Engineers, Series B*, 79, 1264-1268 (2013)  
日出間るり, 鈴木洋, 原田真吾, 白木能仁, 古川英光, “急縮小流れを利用した低粘度高分子溶液の伸長粘度測定法の開発”, *日本機械学会論文集B版* 79巻, 803号, 1264-1268 (2013)
20. Koji Masuda, Hiroshi Suzuki, Yoshiyuki Komoda, Ruri Hidema, “Aggregation/Dispersion Behaviors of Fine Particles in a Flow between Parallel Plates”, *Journal of Chemical Engineering of Japan*, 46, 524–529 (2013)
21. Hisato Muroi, Ruri Hidema, Jin Gong, Hidemitsu Furukawa, “Development of Optical 3D Gel Printer for Fabricating Free-Form Soft & Wet Industrial Materials and Evaluation of Printed Double-Network Gels”, *Journal of Solid Mechanics and Materials Engineering*, 7, 163–168 (2013)
22. Yosuke Watanabe, Keisuke Maekawa, Ruri Hidema, M. Hasnat Kabir, Jin Gong, Hidemitsu Furukawa, “Structural Analysis and Mechanical Properties of Dry-Synthesis Gels”, *Journal of Solid Mechanics and Materials Engineering*, 7, 224–227 (2013)
23. Hidemitsu Furukawa, Ruri Hidema, Go Takada, Yoshitaka Amano, M. Hasnat Kabir, Jin Gong, “Smart Hydrogels Developed with Inter-Crosslinking Network (ICN) Structure”, *Journal of Solid Mechanics and Materials Engineering*, 7, 245–250 (2013)
24. Jin Gong, Yosuke Watanabe, Yusuke Watanabe, Ruri Hidema, M. Hasnat Kabir, Hidemitsu Furukawa, “Development of a Novel Standard Type of Gel Engineering Materials via Simple Bulk Polymerization”, *Journal of Solid Mechanics and Materials Engineering*, 7, 455–462 (2013)
25. Ruri Hidema, Hiroshi Suzuki, Shion Hisamatsu, Yoshiyuki Komoda, Hidemitsu Furukawa, “Effects of the Extensional Rate on Two-dimensional Turbulence of Semi-dilute Polymer Solution Flows”, *Rheologica Acta*, 52, 949-961 (2013)
26. Saki Senda, Yoshiyuki Komida, Hiroshi Takeda, Yushi Hirata, Ruri Hidema, Hiroshi Suzuki, “Fluid Deformation Induced by a Rotationally Reciprocating Impeller”, *Journal of Chemical Engineering of Japan*, 47, 151-158 (2014)
27. Ruri Hidema, Takuya Tano, Hiroshi Suzuki, Makoto Fujii, Yoshiyuki Komoda, Takafumi Toyoda, “Phase Separation Characteristics of Ammonium Alum Hydrates with Poly Vinyl Alcohol”, *Journal of Chemical Engineering of Japan*, 47, 169-174 (2014)
28. Hiroshi Suzuki, Yuto Furukawa, Ruri Hidema, Yoshiyuki Komoda, “Flow and Oxygen-Dissolution Characteristics of Micro-Bubbles in a Viscoelastic Fluid”, *Journal of Chemical Engineering of Japan*, 47, 201-206 (2014)
29. Hidemitsu Furukawa, Noriko Tan, Yosuke Watanabe, Jin Gong, M. Hasnat Kabir, Ruri Hidema, Yoshiharu Miyashita, Kazuyuki Horie, Rikio Yokota, “High-Strength Network Structure of Jungle-Gym Type Polyimide Gels Studied with Scanning Microscopic Light Scattering”, *Mechanics and Model-Based Control of Advanced Engineering Systems*, Springer, pp.103-111 (2014)
30. Ruri Hidema, Naoya Yamada, Hiroshi Suzuki, Hidemitsu Furukawa, “Turbulent Flow Characteristics Controlled by Polymers”, *Mechanics and Model-Based Control of Advanced Engineering Systems*, Springer, pp.163-170 (2014)
31. Ruri Hidema, Hiroshi Suzuki, Shion Hisamatsu, Yoshiyuki Komoda, “Characteristic Scales of Two-Dimensional Turbulence in Polymer Solutions”, *AIChE journal*, 60, 1854-1862 (2014)

32. Takafumi Toyoda, Reishi Narisada, Hiroshi Suzuki, Ruri Hidema, Yoshiyuki Komoda, "Fabrication Process of Silica Hard-shell Microcapsule (HSMC) Containing Phase-change Materials", *Chemistry Letters*, 43, 820-821 (2014)
33. Takafumi Toyoda, Ruri Hidema, Hiroshi Suzuki, Yoshiyuki Komoda, "Crystal Growth and Viscosity Behaviors of Ammonium Alum Hydrate Solution with PVA in Shear Flow", *Nihon Reoroji Gakkaishi*, 42, 219-226 (2014)
34. Hiroshi Suzuki, Hideki Sato, Ruri Hidema, Yoshiyuki Komoda, "Bulge Structure in a Cavity Swept by a Viscoelastic Fluid", *Journal of Physics: Conference Series*, 530, #012055, 8pages (2014)
35. Ruri Hidema, "Effects of Extensional Rates on Characteristic Scales of Two-Dimensional Turbulence in Polymer Solutions", *Journal of Physics: Conference Series*, 530, #012065, 8pages (2014)
36. Ruri Hidema, Hiroshi Suzuki, Takuya Tano, Yoshiyuki Komoda, "Flow and Heat Transfer Characteristics of Ammonium Alum Hydrate Slurries with Surfactants as Drag-Reducers and with Polyvinyl Alcohol as Stabilizers", *International Heat Transfer Conference 15, begell house. inc. publishers*, DOI: 10.1615/IHTC15.fcv.009469, 14 pages (2015)
37. Hiroshi Suzuki, Ruri Hidema, Yoshiyuki Komoda, "Size Effect of the Flow Path on the Flow and Heat Transfer Characteristics in a Cavity Swept by a Visco-Elastic Fluid", *International Heat Transfer Conference 15, begell house. inc. publishers*, DOI: 10.1615/IHTC15.hex.009449, 15 pages (2015)
38. Hiroshi Suzuki, Ruri Hidema, Yoshiyuki Komoda, "Inertio-elastic flow instability in a micro-cavity swept by a visco-elastic fluid", *Transactions of the JSME (in Japanese)*, 81, #14-00650, 10 pages (2015)  
鈴木洋, 日出間るり, 菰田悦之, "粘弾性流体により掃引されるマイクロキャビティ内の慣性弾性不安定", *日本機械学会論文集*, 81, #14-00650, 10pages (2014)
39. Hiroshi Suzuki, Ruri Hidema, Yoshiyuki Komoda, "Flow Characteristics in a Micro-Cavity Swept by a Visco-Elastic Fluid", *Experimental Thermal and Fluid Science*, 67, 96-101 (2015)
40. Koji Masuda, Hiroshi Suzuki, Yoshiyuki Komoda, Ruri Hidema, "Numerical Simulation of Particle Dispersion in Flow between Coaxial Cylinders under Unsteady Flow Conditions", *Nihon Reoroji Gakkaishi*, 43, 85-92 (2015)
41. Saki Senda, Noriyuki Yamagami, Yoshiyuki Komoda, Yushi Hirata, Hiroshi Suzuki, Ruri Hidema, "Power Characteristics of a Rotationally Reciprocating Impeller", *Journal of Chemical Engineering of Japan*, 48, 885-890 (2015)
42. Yoshiyuki Komoda, Shigeyuki Kobayashi, Hiroshi Suzuki, Ruri Hidema, "Effect of Shear Strain in Coating on the Particle Packing of Gelled-Clay Particle Dispersions during Drying", *Journal of Coating Technology Research*, 12, 939-948 (2015)
43. Ruri Hidema, Hiroshi Suzuki, Ikumi Murao, Shion Hisamatsu, Yoshiyuki Komoda, "Effects of Extensional Rates on Anisotropic Structures and Characteristic Scales of Two-Dimensional Turbulence in Polymer Solutions", *Flow, Turbulence and Combustion*, 96, 227-244 (2016)
44. Ruri Hidema, Takafumi Toyoda, Hiroshi Suzuki, Yoshiyuki Komoda, "Adhesive Behavior of a Calcium Carbonate Particle to Solid Walls Having Different Hydrophilic Characteristics", *International Journal of Heat and Mass Transfer*, 92, 603-609 (2016)
45. Saki Senda, Yoshiyuki Komoda, Yushi Hirata, Hiroshi Takeda, Hiroshi Suzuki, Ruri Hidema, "Characteristics of Flow Field Induced by a Rotationally Reciprocating Plate Impeller", *Journal of Chemical Engineering, Japan*, 49, 341-349 (2016)

46. Hideki Sato, Hiroshi Suzuki, Ruri Hidema, Yoshiyuki Komoda, “Effects of the Molar Ratio of Counter-Ions on Flow Characteristics of Surfactant Solutions Sweeping Cavities”, *Nihon Reorogi Gakkaishi*, 44, 143-151 (2016)
47. Koji Masuda, Katsuhito Araki, Ruri Hidema, Hiroshi Suzuki, Yoshiyuki Komoda, “Dispersion and Re-aggregation of Particles in a Suspension Flowing in an Abrupt Contraction Channel”, *Nihon Reorogi Gakkaishi*, 44, 153-158 (2016)
48. 菰田悦之, 地崎恭弘, 鈴木洋, 日出間るり, “リチウムイオン二次電池負極用スラリー分散過程の粘弾性解析”, “Viscoelastic Analysis of Dispersion Process of Highly Concentrated Suspension for LiB Cathodes”, 粉体工学会誌 *J. Soc. Powder Technol., Japan*, 53, 371-379 (2016)
49. Masato Tamaru, Hiroshi Suzuki, Ruri Hidema, Yoshiyuki Komoda, Kosuke Suzuki, “Fabrication of hard-shell microcapsules containing inorganic materials”, *International Journal of Refrigeration*, 82, 97-105 (2017)
50. 日出間るり, “高分子および界面活性剤の希薄溶液の流動挙動の研究”, *日本レオロジー学会誌*, 45, 225-233 (2017) 奨励賞受賞講演論文査読無し
51. Ruri Hidema, Takahito Shiraki, Yuki Tanino, Yoshiyuki Komoda, Hiroshi Suzuki, “Extensional viscosity of low viscous polymer solutions measured by pressure drops in abrupt contraction channels”, *Nihon Reorogi Gakkaishi*, 46, 13-22 (2018)
52. Hiroshi Suzuki, Ruri Hidema, Keiichiro Tanomura, Yoshiyuki Komoda, Kosuke Suzuki, “Velocity fields around the bulge structure observed in a cavity swept by a visco-elastic fluid”, *Nihon Reorogi Gakkaishi*, 46, 29-36 (2018)
53. Tomoya Date, Yoshiyuki Komoda, Hiroshi Suzuki, Ruri Hidema, Kosuke Suzuki, “Application of a Rotationally Reciprocating Plate Impeller on Crystallization Process”, *Journal of Chemical Engineering, Japan*, 51, 159-165 (2018)
54. Ruri Hidema, Ikumi Murao, Yoshiyuki Komoda, Hiroshi Suzuki, “Effects of the extensional rheological properties of polymer solutions on vortex shedding and turbulence characteristics in a two-dimensional turbulent flow”, *Journal of Non-Newtonian Fluid Mechanics*, 254, 1-11 (2018)
55. Ruri Hidema, Takuya Tano, Hideki Sato, Yoshiyuki Komoda, Hiroshi Suzuki, “Ammonium alum hydrate slurries with surfactants and polyvinyl alcohol as a latent heat transportation material for high temperature”, *International Journal of Heat and Mass Transfer*, 124, 1334-1346 (2018)
56. Efrina, Yoshiyuki Komoda, Hiroshi Suzuki, Ruri Hidema, “Deformation Profile of a Piece of Japonica Cooked Rice with Squeezing Test”, *MATEC Web Conference*, 197, #04005, (2018)
57. Kohei Nakamura, Takashi Ina, Ruri Hidema, Hiroshi Suzuki, Yoshiyuki Komoda, “Phase Change Behavior of Ammonia Alum Hydrate Slurries Passing Through a Heat Exchanger”, *International Heat Transfer Conference 16*, Begell House, pp.4301-4310 (2019)
58. Takumu Otsubo, Tomohiro Senda, Ruri Hidema, Hiroshi Suzuki, Yoshiyuki Komoda, Kosuke Suzuki, Masao Iwaya, Masaru Endo, Naotaka Nishio, “A Novel Technique for Latent Heat Transport Using Super Hydrophobic Flexible Gel”, *International Heat Transfer Conference 16*, Begell House, pp.4311-4318 (2019)
59. Ippei Watanabe, Nami Furukawa, Naoki Kuroda, Ruri Hidema, Hiroshi Suzuki, Yoshiyuki Komoda, Takafumi Horie, Hitoshi Asano, Naoto Ohmura, “Effects of Fabrication Conditions on Silica Hard-Shell Microcapsules Containing Phase Change Materials”, *International Heat Transfer Conference 16*, Begell House, pp. 4319-4325 (2019)
60. Yoshiyuki Komoda, Fumito Tomimasu, Ruri Hidema, Hiroshi Suzuki, “Frequency Analysis of Torque Variation of a Rotationally Reciprocating Impeller Using Newtonian and Viscoelastic

Fluids”, *Chemical Engineering Research and Design*, 142, 327-335 (2019)

61. Kentaro Kuratani, Kaoru Ishibashi, Yoshiyuki Komoda, Ruri Hidema, Hiroshi Suzuki, Hironori Kobayashi, “Controlling of Dispersion State of Particles in Slurry and Electrochemical Properties of Electrodes”, *Journal of Electrochemical Society*, 166, A501-506 (2019)
62. Kohei Nakamura, Takashi Ina, Hiroshi Suzuki, Ruri Hidema, Yoshiyuki Komoda, “Ammonia Alum Hydrate-Based Phase Change Materials for Effective Use of Excess Exhaust Heat from Gas Engines”, *International Journal of Refrigeration*, 100, 63-71 (2019)
63. Ruri Hidema, Taiki Oka, Yoshiyuki Komoda, Hiroshi Suzuki, “Effects of flexibility and entanglement of sodium hyaluronate in solutions on the entry flow in micro abrupt contraction-expansion channels”, *Physics of Fluids*, 31, 072005-1-072005-13 (2019)
64. Ruri Hidema, Seika Hayashi, Hiroshi Suzuki, “Drag force of polyethyleneglycol in flow measured by a scanning probe microscope”, *Physical Review Fluids*, 4, 074201-1-074201-17 (2019)
65. Hiroshi Suzuki, Ruri Hidema, Sohei Usa, Takafumi Horie, Yoshiyuki Komoda, Naoto Ohmura, Keita Yaniya, Yuichi Ichihashi, Satoru Nishiyama, Hitoshi Asano, “Flow and sedimentation characteristics of silica hard-shell microcapsule slurries treated with additives”, *International Journal of Refrigeration*, 106, 18-23 (2019)
66. Kohei Nakamura, Takashi Ina, Ruri Hidema, Hiroshi Suzuki, Yoshiyuki Komoda, “Pipe diameter effect on flow and heat transfer characteristics of ammonia alum hydrate slurries with additives”, *AIChE Journal*, in press (2019)

#### Conference Papers, Peer Reviewed

1. Hidemitsu Furukawa, Ruri Hidema, Kazuyuki Horie, Shunsuke Hirotsu, “Fast and Slow Relaxation Modes in Shrunk Phase of Thermoresponsive N-Isopropylacrilamide Gels Studied with Scanning Microscopic Light Scattering (SMILS)”, *Proceedings of the 4th JSME/ASME 2011 International Conference on Materials and Processing, ICMP2011*, Paper No. ICMP2011-51048, 5 pages, Corvallis, OR, USA, June (2011)
2. Tomohiro Yokoo, Ruri Hidema, Hidemitsu Furukawa, “Novel Optical Devices Developed with High-Strength Gels”, *Proceedings of the 4th JSME/ASME 2011 International Conference on Materials and Processing, ICMP2011*, Paper No. ICMP2011-51049, 5 pages, Corvallis, OR, USA, June (2011)
3. Go Takada, Ruri Hidema, Hidemitsu Furukawa, “Development of Ultrahigh Ductile Gels”, *Proceedings of the 4th JSME/ASME 2011 International Conference on Materials and Processing, ICMP2011*, Paper No. ICMP2011-51050, 4 pages, Corvallis, OR, USA, June (2011)
4. Ruri Hidema, Hidemitsu Furukawa, Hideharu Ushiki, “Polymer Effects on Turbulence in Flowing Soap Films Studied with Film Interference Flow Imaging Method”, *Proceedings of the 4th JSME/ASME 2011 International Conference on Materials and Processing, ICMP2011*, Paper No. ICMP2011-51066, 7 pages, Corvallis, OR, USA, June (2011)
5. Ruri Hidema, Naoya Yamada, Hidemitsu Furukawa, “Diagnosis at a glance of biological non-Newtonian fluids with Film Interference Flow Imaging (FIFI)”, *Proceedings of SPIE 2012 Smart Structures/NDE*, 8346, pp. 83461D-1- 83461D-7, San Diego, CA, USA, March (2012)
6. Hidemitsu Furukawa, Mayumi Yoshikawa, Kyoko Yamada, Toshiyuki Watanabe, Ruri Hidema, Kazuyuki Horie, “Photo-Responsive Gel Actuator Developed with Scanning Microscopic Light Scattering”, *Proceedings of SPIE 2012 Smart Structures/NDE*, 8341, pp.83411T-1-83411T-6, San Diego, CA, USA, March (2012)
7. Yoshitaka Amano, Ruri Hidema, Hidemitsu Furukawa, “An Inter-Crosslinking Network Gels



That Has both Shape Memory and High Ductility”, *Proceedings of SPIE 2012 Smart Structures/NDE*, 8341, pp.83412B-1-83412B-7, San Diego, CA, USA, March (2012)

8. Sho Harada, Ruri Hidema, Hidemitsu Furukawa, “Soft and Wet Actuator Developed with Responsible High-Strength Gels”, *Proceedings of SPIE 2012 Smart Structures/NDE*, 8341, pp.83412C-1-83412C-6, San Diego, CA, USA, March (2012)
9. Hiroshi Suzuki, Makoto Fujii, Taketo Fudaba, Yoshiyuki Komoda, Toru Ishigami, Ruri Hidema, “Solidification Heat Transfer Characteristics of Ammonia Alum Hydrate Slurries Treated with Drag-Reducing Surfactants”, *Proceedings of 10th International Conference on Phase Change Materials and Slurries for Refrigeration and Air Conditioning*, pp.94-101, Kobe, Japan, August (2012)
10. Takafumi. Toyoda, Hiroshi Suzuki, Yoshiyuki Komoda, Ruri Hidema, “Adsorption Characteristics of Ammonia Alum Hydrate Particles onto the Coated Metal”, *Proceedings of 10th International Conference on Phase Change Materials and Slurries for Refrigeration and Air Conditioning*, pp.326-333, Kobe, Japan (2012)
11. Masato Wada, Jin Gong, Ruri Hidema, Hidemitsu Furukawa, “Surface and Bulk Mechanical Properties of Soft and Wet Materials”, *Proceedings of the 3rd Asian Symposium on Materials & Processing (ASMP 2012)*, Paper No. SMSFM1, 3pages, Chennai, India, August (2012)
12. Hisato Muroi, Jin Gong, Ruri Hidema, Hidemitsu Furukawa, “Optical 3D Printing of Soft and Wet Industrial Materials”, *Proceedings of the 3rd Asian Symposium on Materials & Processing (ASMP 2012)*, Paper No. SMSFM2, 3pages, Chennai, India, August (2012)
13. Jin Gong, Yusuke Watanabe, Ruri Hidema, Hidemitsu Furukawa, “Study of Simply Prepared Standard Gel Materials for Industry”, *Proceedings of the 3rd Asian Symposium on Materials & Processing (ASMP 2012)*, Paper No. SMSFM5, 3pages, Chennai, India, August (2012)
14. Hidemitsu Furukawa, Jin Gong, Yoshitaka Amano, Go Takada, Ruri Hidema, “Smart Hydrogels Developed With Intercrosslinking Network (ICN) Structure”, *Proceedings of the 3rd Asian Symposium on Materials & Processing (ASMP 2012)*, Paper No. SMSFM6, 3pages, Chennai, India, August (2012)
15. Ruri Hidema, Hiroshi Suzuki, Yoshiyuki Komoda, Hidemitsu Furukawa, “Single Image Turbulence Analysis for Drag Reduction Affected by Flexibility of Polymers”, *Proceedings of 2012 AIChE Annual Meeting*, Paper No. 142ag, 8pages, Pittsburgh, PA, USA, 28 October - 2 November (2012)
16. Takafumi Toyoda, Hiroshi Suzuki, Yoshiyuki Komoda, Ruri Hidema, “Adsorption Behaviour of a Calcium Carbonate Particle to Solid Walls Having Different Hydrophilic Characteristics”, *Proceedings of 2012 AIChE Annual Meeting*, Paper No. 345f, 8pages, Pittsburgh, PA, USA, 28 October - 2 November (2012)
17. Ruri Hidema, Hiroshi Suzuki, Yoshiyuki Komoda, Hidemitsu Furukawa, “Extensional Viscosity of Semi-Dilute Polymer Solution Effect on Two-Dimensional Turbulence”, *Proceedings of the 23<sup>rd</sup> International Symposium on Transport Phenomena*, Paper No. 155, 6pages, Auckland, New Zealand, November (2012)
18. Hiroshi Suzuki, Yuta Higuchi, Yoshiyuki Komoda, Ruri Hidema, “Effect of the Molar Ratio of Counter-Ions on Flow Characteristics of Surfactant Solutions Sweeping Cavities”, *Proceedings of the 23<sup>rd</sup> International Symposium on Transport Phenomena*, Paper No. 156, 7pages, Auckland, New Zealand, November (2012)
19. Ruri Hidema, Shion Hisamatsu, Hiroshi Suzuki, Yoshiyuki Komoda, “Drag-Reducing Surfactant Effects on Two-Dimensional Turbulent Flow”, *Proceedings of 8<sup>th</sup> World Conference on*

*Experimental Heat Transfer, Fluid Mechanics and Thermodynamics*, Paper No. 4c.3, 3pages, Lisboa, Portugal, June (2013)

20. Hiroshi Suzuki, Takuya Tano, Kouji Tanaka, Ruri Hidema, Yoshiyuki Komoda “Flow and Heat Transfer Characteristics on Ammonia Alum Hydrate Slurries with Surfactants and Stabilizers”, *Proceedings of 8<sup>th</sup> World Conference on Experimental Heat Transfer, Fluid Mechanics and Thermodynamics*, Paper No. 4a.4, 6pages, Lisboa, Portugal, June (2013)
21. Hiroshi Suzuki, Taketo Fudaba, Keiko Fujioka, Ruri Hidema, Yoshiyuki Komoda, “Heat and Mass Transfer Characteristics in a Calcium Chloride/Expanded Graphite Cell in a Chemical Heat Pump”, *Proceedings of International Symposium on Innovative Materials for Processes in Energy Systems 2013*, Paper No. IMPRES2013-054, 6pages, Fukuoka, Japan, September (2013)
22. Ruri Hidema, Hiroshi Suzuki, Junpei Mori, Yoshiyuki Komoda, “Intermittent Gas/Liquid Interfaces in a Micro-Channel for Liposome Production”, *Proceeding of AIChE Annual Meeting 2013*, Paper No. 334575, 8pages, San Francisco, CA, USA, November (2013)
23. Hiroshi Suzuki, Koji Masuda, Ruri Hidema, Yoshiyuki Komoda, “Numerical Simulation On Unsteady Dispersion Characteristics of Particles in a Flow Between Coaxial Cylinders”, *Proceeding of AIChE Annual Meeting 2013*, Paper No. 334568, 8pages, San Francisco, CA, USA, November (2013)
24. Saki Senda, Yoshiyuki Komoda, Hiroshi Takeda, Yushi Hirata, Ruri Hidema, Hiroshi Suzuki, “Characteristics of Fluid Deformation Induced By a Rotationally Reciprocating Impeller”, *Proceeding of AIChE Annual Meeting 2013*, Paper No. 334236, 8pages, San Francisco, CA, USA, November (2013)
25. Yoshiyuki Komoda, Taishi Yamane, Hiroshi Suzuki, Ruri Hidema, “Development of Particle Packed Layer in the Drying Process of Latex Paints”, *Proceeding of AIChE Annual Meeting 2013*, Paper No. 334994, 8pages, San Francisco, CA, USA, November (2013)
26. Hiroshi Suzuki, Ruri Hidema, Yoshiyuki Komoda, “Flow Characteristics in a Micro-Cavity Swept by a Visco-Elastic Fluid”, *Proceedings of 5th International Conference on Heat Transfer and Fluid Flow in Microscale*, Paper No. O121, 6pages, Marseilles, France, April (2014)
27. Ruri Hidema, Hiroshi Suzuki, Keiichiro Tanomura, Yoshiyuki Komoda, “Micro-Fluidic Behavior Near Gas/Liquid Interface on Liposome Production in a Micro-Channel”, *Proceedings of 5th International Conference on Heat Transfer and Fluid Flow in Microscale*, Paper No. O124, 6pages, Marseilles, France, April (2014)
28. Ruri Hidema, Hiroshi Suzuki, Takuya Tano, Yoshiyuki Komoda, “Flow and Heat Transfer Characteristics of Ammonium Alum Hydrate Slurries with Surfactants as Drag-Reducers and with Polyvinyl Alcohol as Stabilizers”, *Proceedings of the 15th International Heat Transfer Conference*, Paper No. IHTC15-9469, 14pages, Kyoto, Japan, August (2014)
29. Hiroshi Suzuki, Ruri Hidema, Yoshiyuki Komoda, “Size Effect of the Flow Path on the Flow and Heat Transfer Characteristics in a Cavity Swept by a Visco-Elastic Fluid”, *Proceedings of the 15th International Heat Transfer Conference*, Paper No. IHTC15-9449, 15pages, Kyoto, Japan, August (2014)
30. Hiroshi Suzuki, Koji Tanaka, Ruri Hidema, Yoshiyuki Komoda, “Size Effect Model on Flow and Heat Transfer Characteristics of Ammonium Alum Hydrate Slurries Treated with Surfactants”, *Proceedings of 2014 AIChE Annual Meeting*, Paper No. 377013, 8pages, Atlanta, GA, USA, November (2014)
31. Ruri Hidema, Hiroshi Suzuki, Yoshiyuki Komoda, “Elastic Instability of Hyaluronate Solution in Micro Abrupt Contraction-Expansion Channels”, *Proceedings of 2014 AIChE Annual Meeting*,

Paper No. 381883, 8pages, Atlanta, GA, USA, November (2014)

32. Yoshiyuki Komoda, Saki Senda, Noriyuki Yamagami, Yushi Hirata, Hiroshi Suzuki, Ruri Hidema, "Torque Variation of a Rotationally Reciprocating Plate Impeller and its Relationship with Fluid Flow in a Cylindrical Vessel", *Proceedings of 15th European Conference on Mixing*, pp.193-198, Saint-Petersburg, Russia, July (2015)
33. Taiki Oka, Ruri Hidema, Hiroshi Suzuki, Yoshiyuki Komoda, "Effects of Contraction Ratio on Elastic Instability of Hyaluronate Solution in a Micro Channel", *Proceedings of ASME-JSME-KSME Joint Fluids Engineering Conference 2015*, Paper No. AJK2015-18556, 7pages, Seoul, Korea, July (2015)
34. Ikumi Murao, Ruri Hidema, Hiroshi Suzuki, Yoshiyuki Komoda, "Relationship between Velocity Field and Curvature of a Vortex in Two-Dimensional Turbulent Flow", *Proceedings of ASME-JSME-KSME Joint Fluids Engineering Conference 2015*, Paper No. AJK2015- 23582, 6pages, Seoul, Korea, July (2015)
35. Hideki Sato, Ruri Hidema, Hiroshi Suzuki, Yoshiyuki Komoda, "A Study on Particle Sedimentation Depression with Poly Vinyl Alcohol and Surfactant", *Proceedings of ASME-JSME-KSME Joint Fluids Engineering Conference 2015*, Paper No. AJK2015-23586, 6pages, Seoul, Korea, July (2015)
36. Masato Tamaru, Hiroshi Suzuki, Ruri Hidema, Yoshiyuki Komoda, "Fabrication of silica hard-shell microcapsule containing inorganic phase-change materials", *Proceedings of the 24<sup>th</sup> IIR International Congress of Refrigeration*, Paper No. 394, 8pages, Yokohama, Japan, August (2015)
37. Hiroshi Suzuki, Keiko Fujioka, Naoki Sawa, Ruri Hidema, Yoshiyuki Komoda, "Heat and Mass Transfer Characteristics in a Calcium Chloride/Hollow Silica Particle Composite", *Proceedings of International Conference on Power Engineering 2015 (ICOP-2015)*, Paper No. ICOPE-15-1053, 9pages, Yokohama, Japan, December (2015)
38. Ruri Hidema, Hiroshi Suzuki, Hideki Sato, Yoshiyuki Komoda, Kohei Nakamura, "Particle Sedimentation Depression with Stabilizers and Surfactants on Phase Change Materials", *Proceedings of 11th International Conference on Phase Change Materials and Slurries for Refrigeration and Air Conditioning*, pp.152-161, Karlsruhe, Germany, May (2016)
39. Hiroshi Suzuki, Masato Tamaru, Ruri Hidema, Yoshiyuki Komoda, "Fabrication Characteristics of Phase-Change Materials of Silica Hard-Shell Microcapsules", *Proceedings of 11th International Conference on Phase Change Materials and Slurries for Refrigeration and Air Conditioning*, pp.246-253, Karlsruhe, Germany, May (2016)
40. Tomoya Date, Yoshiyuki Komoda, Hiroshi Suzuki, Ruri Hidema, "Application on a Rotationally Reciprocating Impeller on Crystallization Process", *5th Asian Conference on Mixing (ACOM2016)*, Paper No. O-106, 5pages, Tendo, Japan, September (2016)
41. Yoshiyuki Komoda, Fumito Tomimasu, Hiroshi Suzuki, Ruri Hidema, "Frequency Analysis of Torque Variation of a Rotationally Reciprocating Impeller", *5th Asian Conference on Mixing (ACOM2016)*, Paper No. O-301, 5pages, Tendo, Japan, September (2016)
42. Ruri Hidema, Yuki Tanino, Takahito Shiraki, Hiroshi Suzuki, Yoshiyuki Komoda, "Extensional Viscosity of Low Viscous Polymer Solutions Measured by Pressure Drops in Abrupt Contraction FLOws", *The 27th International Symposium on Transport Phenomena*, Paper No. ISTP27-112, 7pages, Honolulu, Hawaii, USA, September (2016)
43. Hiroshi Suzuki, Tomohiro Senda, Ruri Hidema, Yoshiyuki Komoda, Takahiro Kusabe, Hiroki Tobayama, Tetsuro Iwata, "Low-Temperature Latent Heat Transition Media with TBAB/CO<sub>2</sub>

- Hybrid Hydrates”, *The 27th International Symposium on Transport Phenomena*, Paper No. ISTEP27-114, 6pages, Honolulu, Hawaii, USA, September (2016)
44. Yudai Tanaka, Yoshiyuki Komoda, Hiroshi Suzuki, Ruri Hidema, “Microrheological investigation on the local viscosity in the drying droplet of polymer solution”, *The 18th International Symposium on Coating Science and Technology*, 10pages, Pittsburgh, PA, USA, 19-21 September (2016)
  45. Hiroshi Suzuki, Ruri Hidema, Kota Inoue, Yoshiyuki Komoda, Masao Iwaya, Tomoya Mizuta, Masaori Yoshikane, “Latent Heat Transportation with Super-Hydrophobic Gel”, *The 4<sup>th</sup> International Forum on Heat Transfer*, Paper No. IFHT2016-1901, 6pages, Sendai, Japan, November (2016)
  46. Kohei Nakamura, Hiroshi Suzuki, Yoshiyuki Komoda, Ruri Hidema, “Flow and Heat Transfer Characteristics of Ammonia Alum Hydrate Slurries with Additives”, *The 4<sup>th</sup> International Forum on Heat Transfer*, Paper No. IFHT2016-1913, 6pages, Sendai, Japan, November (2016)
  47. Tomohiro Senda, Hiroshi Suzuki, Ruri Hidema, Yoshiyuki Komoda, Takahiro Kusabe, Hiroki Tobayama, Tetsuro Iwata, “Solid-Solid Phase Change and Crystal generation characteristics of TBAB/CO<sub>2</sub> Double Hydrate”, *The 9th JSME-KSME Thermal and Fluids Engineering Conference (TFEC9)*, Paper No. TFEC9-1450, 5pages, Okinawa, Japan, 28-30 October (2017)
  48. Daichi Okada, Kento Nakatani, Ruri Hidema, Hiroshi Suzuki, Yoshiyuki Komoda, Kosuke Suzuki, “Injection Characteristics of Viscoelastic Fluids from a Nozzle”, *The 9th JSME-KSME Thermal and Fluids Engineering Conference (TFEC9)*, Paper No. TFEC9-1524, 5pages, Okinawa, Japan, 28-30 October (2017)
  49. Ruri Hidema, Yuki Tanino, Hiroshi Suzuki, Yoshiyuki Komoda, Kosuke Suzuki, “Flow Characteristics of Viscoelastic Fluids with Abrupt Contraction Channels”, *The 9th JSME-KSME Thermal and Fluids Engineering Conference (TFEC9)*, Paper No. TFEC9-1558, 5pages, Okinawa, Japan, 28-30 October (2017)
  50. Ruri Hidema, Ikumi Murao, Hiroshi Suzuki, Yoshiyuki Komoda, “Effects of Extensional Rheological Properties of Polymer Solutions on a Two-dimensional Turbulent Flow”, *The 11th Pacific Symposium on Flow Visualization and Image Processing (PSFVIP11)*, Paper No. PSFVIP-105, 5pages, Kumamoto, Japan, 1-3 December (2017)
  51. Hiroshi Suzuki, Ippei Watanabe, Ruri Hidema, Yoshiyuki Komoda, Takafumi Horie, Naoto Ohmura, Hitoshi Asano, “Dispersion and Flow Characteristics of Hard-Shell Microcapsules with Phase Change Materials”, *Proceedings of 12th IIR/IIF International Conference on Phase Change Materials and Slurries for Refrigeration and Air Conditioning*, Paper No. 0023, 8 pages, Orford, Canada, May (2018)
  52. Kohei Nakamura, Takashi Ina, Hiroshi Suzuki, Ruri Hidema, Yoshiyuki Komoda, “Ammonia Alum Hydrate-Based Phase Change Materials for Effective Use of Excess Exhaust Heat from Gas Engines”, *Proceedings of 12th IIR/IIF International Conference on Phase Change Materials and Slurries for Refrigeration and Air Conditioning*, Paper No. 0029, 8 pages, Orford, Canada, May (2018)
  53. Yoshiyuki Komoda, Tomoya Date, Ruri Hidema, Hiroshi Suzuki, Naoto Ohmura, “Laminar mixing using a rotationally reciprocating anchor impeller”, *Proceedings of 16th European Conference on Mixing*, Paper No. 181, 4Pages, Toulouse, France, September (2018)
  54. Hiroshi Suzuki, Ruri Hidema, Ippei Watanabe, Yoshiyuki Komoda, Takafumi Horie, Naoto Ohmura, Hitoshi Asano, “Fabrication of Hard-Shell Microcapsules Containing Sodium Acetate Inorganix Hydrates”, *Proceedings of The 29th International Symposium on Transport*

*Phenomena (ISTP29)*, Paper No. ISTP29-088, 4Pages, Honolulu, USA, 30 October - 2 November (2018)

55. Ruri Hidema, Yuki Tanino, Yoshiyuki Komoda, Hiroshi Suzuki, “Extensional Viscosity of Highly Viscoelastic Solutions Measured by Pressure Drops in Abrupt Contraction Flows”, *Proceedings of The 29th International Symposium on Transport Phenomena (ISTP29)*, Paper No. ISTP29-125, 4Pages, Honolulu, USA, 30 October - 2 November (2018)
56. Hiroshi Suzuki, Sohei Usa, Ruri Hidema, “Flow Characteristics of Silica Hard-Shell Microcapsule Slurries Treated with Additives”, *Proceedings of International Conference on Refrigeration*, Paper No. 860, 8Pages, Montreal, Canada, (2019)