

# GCOE 国際会議 報告書

2012年2月24日

文責：荒木武昭

開催会議名： Phase Transition Dynamics in Soft Matter:

Bridging Microscale and Mesoscale

開催日時：平成24年2月19日～22日（19日はサテライトミーティングとして）

開催場所：京都大学基礎物理学研究所、芝蘭会館

主催：京都大学基礎物理学研究所

学振先端研究拠点事業「ソフトマターの非平衡ダイナミクスに関する国際研究ネットワーク」

京都大学 GCOE プログラム「普遍性と創発性から紡ぐ次世代物理学 フロンティア開拓のための自立的人材養成」

京都大学 GCOE プログラム「物質科学の新基盤構築と次世代育成国際拠点」

後援：京都大学教育研究振興財団

実行委員会メンバー：

氏名（所属・身分）

山本 潤（京都大学・教授）(代表)、荒木 武昭（京都大学・准教授）、福田 順一（産総研・主任研究員）、古川 亮（東京大学・助教）、早川 尚男（京都大学・教授）、太田 隆夫（京都大学・教授）、田中 肇（東京大学・教授）、谷口 貴志（京都大学・准教授）、山本 量一（京都大学・教授）

参加者数（合計 165 名）：内訳を必ず下記へ記入のこと

ドイツ（4人）、フランス（1名）、アメリカ（4名）、イギリス（3名）、韓国（5名）、台湾（2名）、オランダ（1名）、ロシア（1名）、日本在住の外国人研究者（10名）、日本（133名）

※20～22日の会議のみ

主な招待講演者：氏名 所属 出身国

David Andelman (Tel Aviv University, Israel)

Daniel Bonn (University of Amsterdam, Netherlands)  
Jan K. G. Dhont (Forschungszentrum Jülich, Germany)  
Jack F. Douglas (NIST, USA)  
Steve Granick (University of Illinois at Urbana-Champaign, USA)  
Anaël Lemaître (Université Paris-Est, France)  
Hartmut Löwen (Heinrich-Heine-Universität Düsseldorf, Germany)  
Hiroshi Noguchi (University of Tokyo, Japan)  
Akira Onuki (Kyoto University, Japan)  
Wilson C. K. Poon (The University of Edinburgh, UK)  
Masaki Sano (University of Tokyo, Japan)  
Hideki Seto (KEK, Japan)  
Nariya Uchida (Tohoku University, Japan)  
Julia M. Yeomans (University of Oxford, UK)  
Slobodan Žumer (University of Ljubljana, Slovenia)  
Kyozi Kawasaki (Kyushu University, Japan)  
Takeji Hashimoto (Kyoto University, Japan)  
Helmut Brand (Bayreuth University, Germany)  
Ryoichi Yamamoto (Kyoto University, Japan)

## 会議の意義、内容、成果等の概要

コロイド、高分子、液晶、生体物質、ガラス、粉流体などの“柔らかい”力学応答を示す物質群の総称であるソフトマターは、原子・分子スケール(マイクロ)よりは十分大きな空間スケール(メソスケール)に、構成要素あるいは構成要素が自己凝集した結果である顕著な内部構造を有する。このことは、系に構造的、動的な階層構造が本質的に存在することを意味し、例えば、液晶系や相分離液体などは、構成要素はマイクロであっても、相転移に付随する秩序化の結果、複雑なメソ・マクロスケールの秩序構造を形成する。他方、高分子、コロイド、膜系などは、系の構成要素が既にメソ構造であるが、様々な静的、動的な相互作用に起因してさらに高次階層のメソ構造を形成する。ソフトマターの物質系は、これらメソ構造の“遅い”運動がその動的物性を決定的に支配するという点で共通しており、その強い非平衡性、非線形応答に最大の特色がある。

ソフトマター物理における鍵となるアプローチは、臨界現象の理解に大きな役割を果たした「粗視化」といっても過言ではない。微視的な自由度を落とし、問題に本質的な時間・空間スケールの自由度のみを抽出する方法であるが、森による射影演算子、川崎によるモード結合理論に見られるように、我が国はこの分野で世界をリードしてきた。近年、この様な階層的な時間空間構造に着目したアプローチは、これまで液体論的な微視的立場から研究されてきた、過冷却液体のスローダイナミクス・非線形流動の問題、さらには階層を超えた階層間結合、例えば、マクロな濃度場と微視的なイオンの結合に由来するソルベーション効果など、の問題などへ応用されるなど、従来の粗視化の枠を超えた新たな展開を見せはじめている。相転移の研究はソフトマター物理の常に中心的な話題であり続けているが、そこでは物性の変化に関する自由度の抽出(粗視化)や現象に潜む普遍性は何かということが常に鍵になる。種々の未解明の問題において、それらが何であるかは自明ではないが、本質的なメカニズムを理解するためには不可避である。

本研究会の目的は、上でふれたようなソフトマター物理の新しい主要な問題となりうるいくつかのトピックスについて、特に「相転移ダイナミクス」という観点から内外の研究者を集め活発な議論を行い、新しい潮流を作り出すことを目指すことである。アドホックな問題設定について語り合うのではなく、重要かつ本質的な問題を正面から語り合う場にすべく、実績豊かな研究者のみならず、野心的な若手研究者を含め、この分野の長期的な発展に資することができればと考え、研究会を企画した。

研究会一日目午前は、ガラス転移、レオロジーに関するセッションが設けられ、3

件の口頭発表が行われた。午後は、高分子、コロイド、膜などに関する5件の発表がなされ、いずれも白熱した議論が展開された。また、午後の後半では、40件のポスター発表が行われた。主に大学院生、ポスドクの発表が中心であったが、いずれもじっくりと聞きたいと思わせるような内容ばかりであった。プログラムでは100分という時間を設定していたが、それでは全く足りないと感じさせる熱のこもった議論が、至るところで展開されていた。

研究会二日目は、前半は液晶の配向欠陥に関連する3件の講演が行われた。後半は、小貫明氏による基調講演を含む4件の講演がなされ、ソフトマターにおけるイオン系の役割、二成分流体における溶媒和の効果、オリエンテーションガラスにおけるメゾ構造の振る舞いについて説明がなされた。その後、39件のポスター発表が行われた。初日と同じく、白熱した議論ばかりであった。

三日目午前前半は、カシミール効果、ダイラタンシー流体といった振る舞いを見せるコロイド・粉体分散系のセッションが行われ、後半は生体系へとつながる物理現象をどうやって説明するかといった点に着目した講演がなされた。午後はアクティブマター系を含む非平衡ダイナミクスに関する議論が展開された。

今回の研究会は、ソフトマターにおける相転移ダイナミクス、メゾスケールへの粗視化といった点に着目し企画を行った。一言で粗視化といっても様々な系で様々な手法が開発されている。今回は対象としてやや広めにプログラムを構成したため、企画当初は進んだ議論ができるのか不安な一面もあったが、それは全くの杞憂であったと思う。口頭発表、ポスター発表、いずれも熱のこもった議論が展開され、それらは、各自の研究対象においてより深い理解をもたらすだけでなく、異なる研究対象が有機的に結びついた新しいアイデアへとつなげることができると思わせるものばかりであった。これらを種にして今後も継続して議論を続けていきたい。

参加者リスト  
氏名・出身・所属・身分

別紙のとおり

	Family name	First name	affiliation		position
1	Ajisaka	Shigeru	Universidad de Chile	Chile	Post-doc
2	Amano	Ken-ichi	Kobe University	Japan	Post-doc
3	Andelman	David	Tel Aviv University	Israel	Professor
4	Araki	Takeaki	Kyoto University	Japan	Associate Professor
5	Aya	Satoshi	Tokyo Institute of Technology	Japan	student (D1)
6	Bodrova	Anna	Moscow State University	Russian Federation	Research Associate
7	Bonn	Daniel	University of Amsterdam	Netherland	Professor
8	Chen	Hsuan-Yi	National Central University	Taiwan	Professor
9	Dhont	Jan K. G.	Forschungszentrum Jülich	Germany	Professor
10	Doi	Masao	University of Tokyo	Japan	Professor
11	Dotera	Tomonari	Kinki University	Japan	Professor
12	Douglas	Jack F.	NIST	USA	Professor
13	Eri	Ayako	Ochanomizu University	Japan	Post-doc
14	Fujitani	Youhei	Keio University	Japan	Associate Professor
15	Fukai	Shintaro	University of Kobe	Japan	student (B4)
16	Fukuda	Jun-ichi	National Institute of Advanced Industrial Science and Technology	Japan	Senior Researcher
17	Furukawa	Akira	The University of Tokyo	Japan	Assistant professor
18	Granick	Steve	University of Illinois at Urbana-Champaign	USA	Professor
19	Hamada	Tsutomu	Japan Advanced Institute of Science & Technology	Japan	Associate Professor
20	Hashimoto	Takeji	Kyoto University	Japan	Emeritus Professor
21	Hatano	Takahiro	University of Tokyo	Japan	Assistant Professor
22	Hayakawa	Hisao	Kyoto University	Japan	Professor
23	Hayashi	Hitoshi	Kyoto University	Japan	student (M2)
24	Himeno	Shun-ichi	Hanazono University	Japan	Professor
25	Himeno	Hiroki	Japan Advanced Institute of Science and Technology, School of Materials	Japan	student (M2)
26	Hishida	Mafumi	University of Tsukuba	Japan	Assistant Professor
27	Hoerning	Marcel	Kyoto University	Japan	Post-doc
28	Honda	Takashi	Zeon Corporation	Japan	Researcher
29	Ichikawa	Masatoshi	Kyoto University	Japan	Lecturer
30	Ikeda	Masahiro	Kyoto University	Japan	student (D1)
31	Imaeda	Tatsuhiko	Aichi Gakusen University	Japan	Professor
32	Indei	Tsutomu	Illinois Institute of Technology	USA	Visiting Assistant Professor
33	Ishii	Yoko	Kyoto University	Japan	Assistant Professor
34	Itto	Yuichi	Aichi Institute of Technology	Japan	Instructor
35	Iwashita	Yasutaka	Kyushu University	Japan	Assistant professor
36	Izaki	Kuniyoshi	Kyushu Univ	Japan	student (B4)
37	Izutsu	Ken-ichi	National Institute of Health Sciences	Japan	Senior Rresearch Scientist
38	James	Richard	National Institute of Advanced Industrial Science and Technology	Japan	Post-doc
39	Kageshima	Masami	Tokyo Gakugei University	Japan	Associate Professor
40	Kang	Kyongok	Forschungszentrum Juelich	Germany	Dr. Researcher
41	Katsuda	Kouhei	Kyushu University	Japan	student (B4)
42	Katsuki	Atsunari	Nihon University	Japan	Research Assistant
43	Kawakatsu	Toshihiro	Tohoku University	Japan	Professor
44	Kawasaki	Kyozi	Kyushu University	Japan	Emeritus Professor
45	Kawasaki	Takeshi	Kyoto University	Japan	Post-doc
46	Kim	E. Grace	Korea Institute for Advanced Study	South Korea	Post-doc
47	Kim	Bongsoo	Changwon National University	Korea	Professor
48	Kim	Kang	Institute for Molecular Science	Japan	Assistant Professor
49	Kimoto	Masakiyo	Kinki University	Japan	student (M2)
50	Kimura	Yasuyuki	Kyushu University	Japan	Professor
51	Kitahata	Hiroyuki	Chiba University	Japan	Associate Professor
52	Kobashi	Junji	Osaka University	Japan	student (B4)
53	Kobayashi	Hiroshi	AIST	Japan	Dr.
54	Kobayashi	Mika	University of Tokyo	Japan	Project Research Associate
55	Kobayashi	Naoki	Chuo University	Japan	Research Associate
56	Komura	Shigeyuki	Tokyo Metropolitan University	Japan	Associate Professor
57	Koyama	Takehito	Japan Agency for Marine-Earth Science and Technology	Japan	Researcher

58	Lagerwall	Jan	Seoul National University	South	Assistant Professor
59	Lamaitre	Anael	Université Paris-Est	France	Professor
60	Leocmach	Mathieu	The University of Tokyo	Japan	Post-doc
61	Lowen	Harmut	Heinrich-Heine-Universität Düsseldorf	Germany	Professor
62	Menzel	Andreas	Heinrich Heine University Duesseldorf	Germany	Post-doc
63	Mii	Shunsaku	Kyushu University	Japan	Associate Professor
64	Miyazaki	Syuji	Kyoto University	Japan	Senior Lecturer
65	Miyazaki	Kunimasa	Tsukuba University	Japan	Associate professor
66	Mochizuki	Kenji	The Graduate University for Advanced Studies	Japan	student (D1)
67	Molina	John	Kyoto University	Japan	Post-doc
68	Morita	Masamune	Japan Advanced Institute of Science and Technology	Japan	student (D2)
69	Murakami	Ryo	Kyoto University	Japan	student (D1)
70	Murashima	Takahiro	Kyoto University	Japan	Post-doc
71	Murata	Ken-ichiro	University of Tokyo	Japan	Post-doc
72	Nakajima	Chihiro	Kyushu University	Japan	Post-doc
73	Nakanishi	Hiizu	Kyushu university	Japan	Professor
74	Nakayama	Yasuya	Kyushu University	Japan	Assistant Professor
75	Nakazawa	Genki	Osaka University	Japan	student (M1)
76	Narumi	Takayuki	Kyushu University	Japan	Post-doc
77	Nemoto	Fumiya	Kyoto University	Japan	student (D3)
78	Nishiyama	Isa	DIC	Japan	Project Leader
79	Nogawa	Tomoaki	The University of Tokyo	Japan	Post-doc
80	Noguchi	Hiroshi	University of Tokyo	Japan	Associate Professor
81	Noguchi	Tomohiro	Kyushu University	Japan	student (M1)
82	Odagiri	Kenta	Ochanomizu University	Japan	Post-doc
83	Ohta	Takao	Kyoto University	Japan	Professor
84	Okamoto	Ryuichi	Kyoto University	Japan	Post-doc
85	Okuzono	Tohru	Nagoya City University	Japan	Associate Professor
86	Onuki	Akira	Kyoto University	Japan	Professor
87	Otomura	Koutarou	The University of Tokyo	Japan	student (M1)
88	Pak	Hyuk Kyu	Pusan National University	Korea	Professor
89	Poon	Wilson C. K.	The University of Edinburgh	UK	Professor
90	Royall	Paddy	University of Bristol	UK	Royal Society University Research Fellow
91	Russo	John	University of Tokyo	Japan	Post-doc
92	Shimizu	Ryotaro	The University of Tokyo	Japan	student (D1)
93	Sakamoto	Yasuhiro	Osaka Prefecture University	Japan	Special Lecturer
94	Sakaue	Takahiro	Kyushu University	Japan	Assistant Professor
95	Sano	Masaki	University of Tokyo	Japan	Professor
96	Sano	Tomohiko	Yukawa Institute for Theoretical Physics	Japan	student (M1)
97	Sasa	Shin-ichi	The university of Tokyo	Japan	Professor
98	Scalia	Giusy	Seoul National University	South	Assistant Professor
99	Seki	Masaharu	Hokkaido Information	Japan	Professor
100	Seto	Hideki	KEK	Japan	Professor
101	Shiba	Hayato	University of Tokyo	Japan	Research Associate
102	Shimokawa	Naofumi	University of Tokyo	Japan	Post-doc
103	Snezhko	Alexey	Argonne National Laboratory	USA	Staff Scientist
104	Sumino	Yutaka	Aichi University of Education	Japan	Assistant Professor
105	Suzuki	Ryo	The University of Tokyo	Japan	student (D3)
106	Tagashira	Kenji	Osaka University	Japan	student (D2)
107	Takada	Satoshi	Kyoto University	Japan	student (M1)
108	Takada	Akira	Asahi Glass Co. Ltd.	Japan	Junior Fellow
109	Takae	Kyohei	Kyoto University	Japan	student (D2)
110	Takanishi	Yoichi	Kyoto University	Japan	Associate Professor
111	Takeuchi	Kazumasa A.	The University of Tokyo	Japan	Assistant Professor
112	Tanaka	Hajime	University of Tokyo	Japan	Professor
113	Tanaka	Sayuri	Kyushu University	Japan	student (B4)
114	Tanaka	Kenta	Kyoto University	Japan	student (B4)
115	Tanaka	Shinpei	Hiroshima University	Japan	Associate Professor
116	Taniguchi	Takashi	Kyoto University	Japan	Associate Professor
117	Tarama	Mitsusuke	Kyoto University	Japan	student (M2)
118	Tatsumi	Rei	Kyoto University	Japan	student (D2)
119	Teshigawara	Ryohei	Kyoto University	Japan	student (D3)
120	Toda	Akihiko	Hiroshima University	Japan	Professor
121	Uchida	Nariya	Tohoku University	Japan	Assistant professor

122	Uchida	Takayuki	Kyoto University	Japan	student (D1)
123	Ueda	Akira	Kyoto University	Japan	Emeritus Professor
124	Uematsu	Yuki	Kyoto University	Japan	student (M1)
125	Vestergaard	Mun'delanji C.	Japan Advanced Institute of Science and Technology	Japan	Associate Professor
126	Wada	Hirofumi	Kyoto University	Japan	Assistant Professor
127	Wang	Shih-Hao	National Taiwan University	Taiwan	student (D5)
128	Washizu	Hitoshi	Toyota Central R&D Labs. Inc.	Japan	Senior Researcher
129	Yabunaka	Shunsuke	Kyoto University	Japan	student (D1)
130	Yamaguchi	Tetsuo	Kyushu University	Japan	Project Associate Professor
131	Yamamoto	Jun	Kyoto University	Japan	Professor
132	Yamamoto	Ryoichi	Kyoto University	Japan	Professor
133	Yamamoto	Akihisa	Kyoto University	Japan	student (D1)
134	Yamanaka	Masanori	Nihon University	Japan	Professor
135	Yamanaka	Junpei	Nagoya City University	Japan	Professor
136	Yamazaki	Yoshihiro	Waseda University	Japan	Professor
137	Yeomans	Maria	University of Oxford	UK	Professor
138	Yokota	Maria	Ochanomizu University	Japan	Post-doc
139	Yoshida	Hiroyuki	Osaka University	Japan	Assistant Professor
140	Yoshikawa	Kenichi	Kyoto University	Japan	Professor
141	Yoshino	Hajime	Osaka University	Japan	Assistant Professor
142	Yoshioka	Jun	Kyoto University	Japan	student (D2)
143	Yoshioka	Naoki	Kyoto University	Japan	Post-doc
144	Zumer	Slobodan	University of Ljubljana	Slovenia	Professor
145	Kai	Shoichi	Kyushu University	Japan	Professor
146	Shibayama	Mitsuhiro	The University of Tokyo	Japan	Professor
147	Lamberg	Antti	Kyoto University	Japan	
148	Kalay	Ziya	Kyoto University (iCems)	Japan	
149	Kawakami	Kohsaku	National Institute for Material Science	Japan	
150	Bono	Shinji	Kyoto University	Japan	student (M1)
151	Yamanaka	Sadako	Kyoto University	Japan	
152	Derks	Didi	Osaka University	Japan	Post-doc
153	Kobayashi	Hideki	AIST	Japan	Post-doc
154	Koga	Kenichiro	Okayama University	Japan	Professor
155	Inagaki	Shio	Kyoto University	Japan	Post-doc
156	Okamura	Satoshi	Osaka University	Japan	
157	Matsui	Katsuhito	Kyoto University	Japan	
158	Murase	Masatsugu	Kyoto University	Japan	Associate professor
159	Meunier	Anne	Kyoto University	Japan	
160	Shitara	Kyohei	Kyoto University	Japan	student (D2)
161	Yoshikai	Shingo	Kyoto University	Japan	
162	Yao	Makoto	Kyoto University	Japan	Professor
163	Fujii	Yosuke	Kyoto University	Japan	
164	Ishimoto	Yoshitaka	Kyoto University	Japan	Post-doc
165	Matsuda	Kazuhiro	Kyoto University	Japan	Associate professor



## 会議プログラム

### February 20 (Monday)

- 9:00 Registration
- 10:00 Opening  
*Chair : Kunimasa Miyazaki (Tsukuba University, Japan)*
- 10:10 Jack F. Douglas (NIST, USA) p. 17  
Influence of nanoparticle and molecular additives on structural relaxation and collective particle motion in a simulated glass-forming polymer liquid
- 10:50 Hajime Yoshino (Osaka University, Japan) p. 18  
Rigidity of amorphous solids: a first principle computational scheme by the cloned liquid method
- 11:15 Anaël Lemaître (Université Paris-Est, France) p. 19  
Elementary mechanisms of plastic deformation in amorphous materials
- 11:55 Lunch break (80min)  
*Chair : Tohru Okuzono (Nagoya City University, Japan)*
- 13:15 Steve Granick (University of Illinois at Urbana-Champaign, USA) p. 20  
From living cells to Janus colloids: soft surprises
- 13:55 Shigeyuki Komura (Tokyo Metropolitan University, Japan) p. 21  
Anomalous lateral diffusion in a viscous membrane surrounded by viscoelastic media
- 14:20 Break (30 min)  
*Chair : Takashi Taniguchi (Kyoto University, Japan)*
- 14:50 Shinpei Tanaka (Hiroshima University, Japan) p. 22  
Kinetics of the phase separation in dilute solutions of pentaethylene glycol monododecyl ether
- 15:15 Kenichi Yoshikawa (Kyoto University, Japan) p. 23  
Phase transition of genomic giant DNA
- 15:40 Julia M. Yeomans (University of Oxford, UK) p. 24  
Easier sieving through narrower pores: fluctuations and barrier crossing in flow-driven polymer translocation
- 16:20 Poster session A (100 min)

## **February 21 (Tuesday)**

*Chair : Yasuyuki Kimura (Kyushu University, Japan)*

9:00 Slobodan Žumer (University of Ljubljana, Slovenia) p. 25

Geometry and topology of chiral nematic colloids: links, knots, and braids

9:40 Jan Lagerwall (Seoul National University, South Korea) p. 26

Phase transitions in liquid crystal shells

10:05 Break (30 min)

*Chair : Jun-ichi Fukuda (AIST, Japan)*

10:35 Wilson C. K. Poon (University of Edinburgh, UK) p. 27

A self-quenched defect glass in a colloid-nematic liquid crystal composite

11:15 Hideki Seto (KEK, Japan) p. 28

Membrane formation by preferential solvation of water,  
3-methylpyridine, and antagonistic salt

11:55 Lunch break (80min)

*Chair : Toshihiro Kawakatsu (Tohoku University, Japan)*

13:15 David Andelman (Tel Aviv University, Israel) p. 29

Electrolytes near interfaces and membranes: Ion-specific effects  
beyond the Poisson-Boltzmann theory

13:55 Anna Bodrova (Moscow State University, Russia) p. 30

Microphase separation induced by complexation of ionic-non-ionic  
diblock copolymers with oppositely charged linear chains

14:20 Break (30 min)

*Chair : Hajime Tanaka (University of Tokyo, Japan)*

14:50 Akira Onuki (Kyoto University, Japan) p. 31

Selective solvation, glass transitions, and plasticity

15:50 Poster session B (100 min)

18:30 Party

## **February 22 (Wednesday)**

*Chair : Takao Ohta (Kyoto University, Japan)*

9:00 Daniel Bonn (University of Amsterdam, Netherlands) p. 32

Critical Casimir forces in binary liquid systems

9:40 Hiizu Nakanishi (Kyushu University, Japan) p. 33

Fluid dynamics of dilatant fluids

10:05 Break (30min)

*Chair : Akira Furukawa (University of Tokyo, Japan)*

10:35 Nariya Uchida (Tohoku University, Japan) p. 34

Minimal models of hydrodynamic synchronization and the collective dynamics of flagella and cilia

11:15 Hiroshi Noguchi (University of Tokyo, Japan) p. 35

Dynamics of lipid membranes from nano to micro meter scales

11:55 Lunch break (80min)

*Chair : Takeaki Araki (Kyoto University, Japan)*

13:15 Hartmut Löwen (Heinrich-Heine-Universität Düsseldorf, Germany) p. 36

Bridging micro- and mesoscales in colloidal soft matter: from crystallization to turbulence

13:55 Paddy Royall (University of Bristol, UK) p. 37

Networks and glasses of colloidal 'rocks'

14:20 Break (30 min)

*Chair : Hisao Hayakawa (Kyoto University, Japan)*

14:50 Alexey Snezhko (Argonne National Laboratory, USA) p. 38

Non-equilibrium dynamics and self-assembled phases in driven colloidal suspensions at liquid interfaces

15:15 Jan K. G. Dhont (Forschungszentrum Jülich, Germany) p. 39

Charged colloids in electric fields and thermal gradients

15:55 Masaki Sano (University of Tokyo, Japan) p. 40

Dynamics and interaction of colloids in driven and active states

16:35 Closing

**Posters** (A: Monday 16:20-18:00, B: Tuesday 15:50-17:30 )

- A1) Shigeru Ajisaka (Universidad de Chile, Chile) p.41  
Polaron formation as a genuine nonequilibrium phenomenon
- A2) Satoshi Aya (Tokyo Institute of Technology, Japan) p. 42  
Temperature- and electric-field-induced anisotropic wetting transition in liquid crystals
- A3) Hsuan-Yi Chen (National Central University, Taiwan) p. 43  
Dynamics of membranes containing active proteins
- A4) Ayako Eri (Ochanomizu University, Japan) p. 44  
Viscous drag friction acting on a fluid drop confined in between two plates
- A5) Youhei Fujitani (Keio University, Japan) p. 45  
Drag coefficient of a raftlike domain almost as viscous as the fluid membrane
- A6) Jun-ichi Fukuda (National Institute of Advanced Industrial Science and Technology, Japan) p. 46  
Simulation of cholesteric blue phase cells
- A7) Tsutomu Hamada (Japan Advanced Institute of Science and Technology, Japan) p. 47  
Photo-induced morphological transition of lipid vesicles
- A8) Hitoshi Hayashi (Kyoto University, Japan) p. 48  
Effect of quasi-two dimensional confinement on micro-pattern dynamics in polymer Solution
- A9) Hiroki Himeno (Japan Advanced Institute of Science and Technology, Japan) p. 49  
Charge-induced transition in membrane mesoscopic structures
- A10) Mafumi Hishida (University of Tsukuba, Japan) p. 50  
Hydration states of lipid and surfactant depending on their self-assemble structures studied by terahertz spectroscopy
- A11) Marcel Hoerning (Kyoto University, Japan) p. 51  
Stabilization of cardiac conduction via rigidity matching between cells and extracellular matrix
- A12) Masahiro Ikeda (Kyoto University, Japan) p. 52  
Lane formation and instability in the model of counter driven particles with anisotropic dissipation

- A13) TsutomuIndei (Illinois Institute of Technology, USA) p. 53  
Study of inertial effects in passive microrheology
- A14) Kuniyoshi Izaki (Kyushu University, Japan) p. 54  
Interparticle force in nematic colloids
- P15) Ken-ichi Izutsu (National Institute of Health Sciences, Japan) p. 55  
Phase separation of non-crystalline concentrated solutes in frozen solutions
- A16) Richard James  
(National Institute of Advanced Industrial Science and Technology, Japan) p.56  
Interaction dynamics of spheres immersed in nematic liquid crystal
- A17) Masami Kageshima (Tokyo Gakugei University, Japan) p. 57  
Experimental study of water dynamics in nanometer-scale gap
- A18) Kyongok Kang (Forschungszentrum Juelich, Germany) p. 58  
Electric-field induced phase transitions of charged fibrous virus (fd) suspensions: Non-equilibrium critical point and field-induced interactions
- A19) Kouhei Katsuda (Kyushu University, Japan) p. 59  
Electrohydrodynamic patterns in cholesteric liquid crystals
- A20) Takeshi Kawasaki (Kyoto University, Japan) p. 60  
Plastic deformations in fcc crystals with stacking faults
- A21) Bongsoo Kim (Changwon National University, Korea) p. 61  
Phase ordering kinetics of the model E: the effect of reversible mode coupling
- A22) E. GraceKim (Changwon National University, Korea) p. 62  
Field-Induced Breakup of Pickering Emulsions
- A23) Kang Kim (Institute for Molecular Science, Japan) p. 63  
Dynamic length scales identified by three-point correlations in glasses: MD and IMCT? or MD vs. IMCT?
- A24) Masakiyo Kimoto (Kinki University, Japan) p. 64  
Phase transition of hard spheres on the gyroid surface
- A25) Hiroyuki Kitahata (Chiba University, Japan) p. 65  
Spontaneous motion of a droplet by the Marangoni effect
- A26) Junji Kobashi (Osaka University, Japan) p. 66  
Size dependance of nematic liquid crystal distribution in micro-sized square holes
- A27) Hiroshi Kobayashi (AIST, Japan) p. 67  
The glass transition as a self-organization of the intermediate range orders based on the dissipative structure theory

- A28) Mika Kobayashi (University of Tokyo, Japan) p. 68  
Liquid-glass transition and aging of a LiCl/water mixture
- A29) Takehito Koyama (Japan Agency for Marine-Earth Science and Technology, Japan) p. 69  
Anomalous long-range electrostatic repulsion induced by density fluctuations in supercritical fluids
- A30) Mathieu Leocmach (University of Tokyo, Japan) p. 70  
Roles of icosahedral and crystal-like order in hard spheres glass transition
- A31) Andreas Menzel (Heinrich Heine University Duesseldorf, Germany) p. 71  
Density and concentration field description of nonperiodic structures
- A32) Kunimasa Miyazaki (Tsukuba University, Japan) p. 72  
Mean-field description of the glass transition
- A33) Syuji Miyazaki (Kyoto University, Japan) p. 73  
Projection-operator method applied to large deviation statistics
- A34) Masamune Morita (Japan Advanced Institute of Science and Technology, Japan) p.74  
Localization of amyloid beta peptides in phase-separated membranes
- A35) Ryo Murakami (Kyoto University, Japan) p. 75  
Super-elastic collisions in isothermal elastic spheres
- A36) Ken-ichiro Murata (University of Tokyo, Japan) p. 76  
Liquid-liquid transition in a water/glycerol mixture
- A37) Chihiro Nakajima (Kyushu University, Japan) p. 77  
Localization and size distribution of a polymer knot confined in a channel
- A38) Yasuya Nakayama (Kyushu University, Japan) p. 78  
Fluctuating colloidal hydrodynamics using smoothed profile method: equi-partition law
- A39) Genki Nakazawa (Osaka University, Japan) p. 79  
Self-alignment of anisotropic micro-structures in a nematic liquid crystal director field
- A40) Takayuki Narumi (Kyushu University, Japan) p. 80  
Nonlinear relaxation in soft-mode turbulence
- B1) Fumiya Nemoto (Kyoto University, Japan) p. 81  
Alignment and anchoring of nematic liquid crystals related to the two-dimensional surface transition of aligning polymers

- B2) Tomoaki Nogawa (University of Tokyo, Japan) p. 82  
Master equation of extensive variables for phase transition dynamics
- B3) Tomohiro Noguchi (Kyushu University, Japan) p. 83  
Microemulsions of amphiphilic Janus particles in a binary liquid mixture
- B4) Kenta Odagiri (Ochanomizu University, Japan) p. 84  
Ring formation by competition between entropic effect and thermophoresis
- B5) Ryuichi Okamoto (Kyoto University, Japan) p. 85  
Charged colloid in mixed solvent with a salt
- B6) Tohru Okuzono (Nagoya City University, Japan) p. 86  
Coarse-grained continuum model of dynamics of charged colloidal crystals
- B7) Hyuk Kyu Pak (Pusan National University, Korea) p. 87  
Study of colloidal hydrodynamics near boundaries using oscillating optical tweezers
- B8) Hyuk Kyu Pak (Pusan National University, Korea) p. 88  
AC electric current generation by mechanically modulating electrical double layers
- B9) John Russo (University of Tokyo, Japan) p. 89  
Mechanism of homogeneous crystal nucleation in supercooled liquids
- B10) Yasuhiro Sakamoto (Osaka Prefecture University, Japan) p. 90  
Binary silica nanoparticle superlattice with ico-AB13 structure
- B11) Takahiro Sakaue (Kyushu University, Japan) p. 91  
Statistics and geometrical picture of ring polymer melts
- B12) Tomohiko Sano (Kyoto University, Japan) p. 92  
Three dimensional simulation of granular jet scattering
- B13) Giusy Scalia (Seoul National University, Korea) p. 93  
Nematic-like arrangement in thin films of a columnar discotic liquid crystal
- B14) Hayato Shiba (University of Tokyo, Japan) p. 94  
Structure formation of lipid membrane with explicit-solvent meshless model
- B15) Naofumi Shimokawa (University of Tokyo, Japan) p. 95  
Charged bilayer membranes in asymmetric ionic solutions:  
Phase diagrams and critical behavior
- B16) Yutaka Sumino (Aichi University of Education, Japan) p. 96  
Collective motion of self-propelled particles with temporally correlated angular noise  
and local nematic interaction
- B17) Kenji Tagashira (Osaka University, Japan) p. 97  
Dynamic control of micro-particle distance using line defect in liquid crystal director

field

- B18) Satoshi Takada (Kyoto University, Japan) p. 98  
Simulation of cohesive granular particles under a plane shear
- B19) Kyohei Takae (Kyoto University, Japan) p. 99  
Structural phase transition of anisotropic particles and formation of orientation-strain glass with addition of impurities
- B20) Kazumasa A. Takeuchi (University of Tokyo, Japan) p. 100  
Liquid-crystal turbulence opens up experimental investigations on absorbing phase transitions
- B21) Kenta Tanaka (Kyoto University, Japan) p. 101  
Network analysis based on large deviation formalism
- B22) Sayuri Tanaka (Kyushu University, Japan) p. 102  
Melting of an isolated two-dimensional colloidal crystal
- B23) Takashi Taniguchi (Kyoto University, Japan) p. 103  
Formation of stimulation-induced meso-scale membrane domains
- B24) Mitsusuke Tarama (Kyoto University, Japan) p. 104  
Spinning motion of a deformable self-propelled particle in a two-dimensional space
- B25) Rei Tatsumi (Kyoto University, Japan) p. 105  
Sound attenuation in concentrated particle dispersions
- B26) Ryohei Teshigawara (Kyoto University, Japan) p. 106  
Wetting dynamics with evaporation and condensation
- B27) Takayuki Uchida (Kyoto University, Japan) p. 107  
Director field of nematic liquid crystal around a water droplet containing ions
- B28) Yuki Uematsu (Kyoto University, Japan) p. 108  
Effects of additives on volume phase transition in gels
- B29) Shih-Hao Wang (National Taiwan University, Taiwan) p. 109  
Vectorial density functional theory of chiral diblock copolymer melts
- B30) Hitoshi Washizu (Toyota Central R&D Labs. Inc., Japan) p. 110  
Ultra low friction of multilayer grapheme
- B31) Shunsuke Yabunaka (Kyoto University, Japan) p. 111  
Polydomain growth at isotropic-nematic transitions in liquid crystalline polymers
- B32) Tetsuo Yamaguchi (Kyushu University, Japan) p. 112  
Non-linear rheology in debonding of soft adhesives



- B33) Akihisa Yamamoto (Kyoto University, Japan) p. 113  
Direct observation and measurement of thermal fluctuation of single soft nano-tubes
- B34) Junpei Yamanaka (Nagoya City University, Japan) p. 114  
Exclusion of impurity particles during crystallization and grain growth  
in charged colloids
- B35) Masanori Yamanaka (Nihon University, Japan) p. 115  
Genus statistics of protein domains and the correlation between ligands
- B36) Maria Yokota (Ochanomizu University, Japan) p. 116  
Dynamical crossover in quasi two-dimensional liquid-drop coalescence
- B37) Hiroyuki Yoshida (Osaka University, Japan) p. 117  
Phase sequence in gold-nanoparticle doped liquid crystal blue phase
- B38) Jun Yoshioka (Kyoto University, Japan) p. 118  
Novel perforated lamellar-nematic phase with micro-phase separation of  
lyotropic lamellar and thermotropic nematic order
- B39) Naoki Yoshioka (Kyoto University, Japan) p. 119  
Time evolution of damage in thermally induced creep rupture