



Despite Melbourne’s reputation, the weather remained constant and sunny allowing the two-hundred and seven delegates from nineteen countries attending the **6th Pacific Rim Conference on Rheology** to enjoy the proceedings and the city.

Five plenary, fourteen keynote and one-hundred and thirty-four oral lectures were presented, and thirty-four posters were exhibited, during the five day conference held in July 2014 at the University of Melbourne Law Building.

Ten eminent researchers also presented their viscoelastic research and its implications during a special symposium to honour Professor Tam Sridhar.

By all accounts the conference was a success with many delegates commenting on the great food and coffee, the conference’s location and the excellent organisation overseen by Professor Peter Scales and the conference organising committee.

Conference presentations

Unlike many scientific and engineering conferences the 6th Pacific Rim Conference on Rheology attracted scientists and engineers from a broad spectrum of academic fields and industries.

Examples of the topics discussed included the design of baby bottle teats and milk formula, the deformability of malaria infected red blood cells, waxy crude oil pumping, the development of industrial scale inline non-Newtonian fluid measurement instrumentation, tailings flow in launders and pipelines, lithium battery development and the rheology of hagfish slime – a marine biopolymer.

The five invited conference plenary speakers were:

Plenary speaker	Topic
Dr. Myung Hwan Kim (Executive Vice President, Head Battery R&D, LG Chem)	Li-ion Battery Development for xEV Applications
Professor Susan Muller (Department of Chemical and Biomolecular Engineering, University of California, Berkeley)	Exploiting Microfluidics For The Manipulation And Analysis Of Molecules, Particles, Capsules, and Suspensions,
Professor Gareth McKinley	Spraying and Air-Assisted Atomization of Complex Fluids



(School of Engineering Professor of Teaching Innovation, Associate Head, Department of Mechanical Engineering, Massachusetts Institute of Technology)	
Associate Professor Yuichi Masubuchi (Division of Multidisciplinary Chemistry - Molecular Rheology - Institute for Chemical Research, Kyoto University)	Multi-Chain Models for Entangled Polymer Dynamics
Professor Debra J. Searles (School of Chemistry and Molecular Biosciences and the Australian Institute for Bioengineering and Nanotechnology, University of Queensland)	Far-from-equilibrium Flow In Nanopores from Molecular Simulation

The fourteen keynote speakers were:

Keynote speaker	Topic
Kenji Urayama (Kyoto Institute of Technology)	Yielding Behavior of Dense Suspensions of Soft Microgels
Jun-ichi Takimoto (Yamagata University)	Tube Diameter in Miscible Blend of Stiff and Flexible Chains Studied by Primitive Path Analysis
Do Hyun Kim (Korea Advanced Institute of Science and Technology)	Superhydrophobic Devices for the Liquid Control
Osamu Urakawa (Osaka University)	Structure and Rheology of Hydrogen Bonding Polymers
Richard Buscall (MSACT Research)	How do Important State Variables like Particle Concentration and Strength of Attraction affect the Rheology of Cohesive Colloidal Suspensions?
Charles Schroeder (University of Illinois at Urbana-Champaign)	New Frontiers in Molecular Rheology and Single Polymer Dynamics
Ian Frigaard (University of British Columbia)	Oscillating flows and diamond shaped co-extrusions using the visco-plastic lubrication concept
Helmut R. Brand (University of Bayreuth)	Macroscopic Behaviour of Systems with a Dynamic Preferred Direction
Tam Sridhar (Monash University)	On the Extensional Rheology of Polymer Melts and Concentrated Solutions
Xavier Chateau (Université Paris-Est, laboratoire Navier)	Upscaling Approach to the Behaviour of Suspensions in a non-Newtonian Fluid
Jason Stokes (The University of Queensland)	Oral processing of foods: From rheology to tribology and beyond
Xue-Feng Yuan (Sun Yat-Sen University)	High Performance Computational Rheology of Complex Fluids for Digital Manufacturing
Emanuela Del Gado (ETH Zurich)	Stress Localization, Stiffening and Yielding in a Model Colloidal Gel
Kyu Hyun (Pusan National University)	Characterization of degree of dispersion for polymer composites by FT-Rheology



The one hundred and forty eight oral lectures were sub-divided into the following eight themes.

Theme	Number of oral presentations
Colloids, Suspensions and Emulsions	32
Food and Bio-rheology	17
Gels and glasses	9
Interfacial and Micro-rheology	4
Non-Newtonian Fluid Mechanics	28
Polymeric Fluids	18
Rheometry and Experimental Techniques	18
Self Assembly	8
TOTAL	134

Conference posters

The thirty-four poster presentations exhibited were judged while the conference delegates were served canapés and drinks. The best poster presentation was awarded at the conference dinner to Sam Skinner (University of Melbourne) for his poster titled “Compressional Rheology of Bio-Fouling Layers in Filtration”.



Professor Peter Scales (conference organising committee chairman) presenting the best conference poster presentation award to Sam Skinner.

Professor Tam Sridhar symposium

A special symposium in honour of Professor Tam Sridhar was held during the conference. Gareth McKinley, Rakesh Gupta, David James, Giuseppe Marrucci, Eric Shaqfeh, Susan Muller, Raj Chhabra, Ronald Larson, Robert Prud'homme and Gary Leal presented a series of viscoelastic related lectures which summarised the latest research and its implications that captivated the audience. However, the lecture by Gareth McKinley on spraying and air-assisted atomization of complex fluids caused the conference delegates to squirm in their seats when he discussed sneezing and the subsequent aerosol spray pattern.



Sponsors and exhibitors

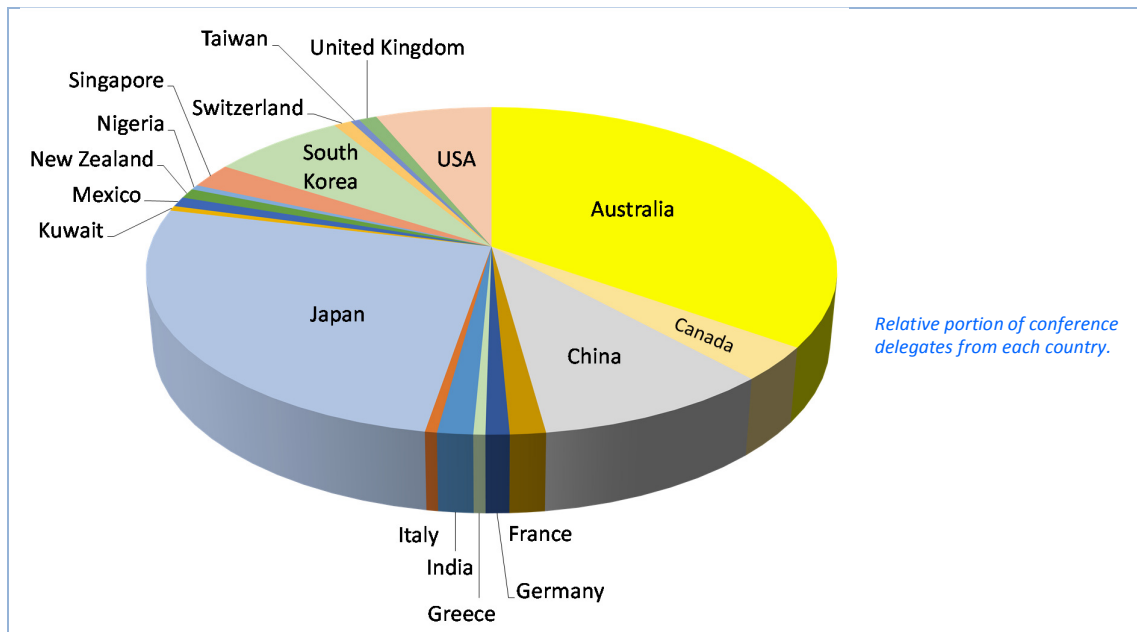
The conference’s major sponsors were Monash University and University of Melbourne. CSIRO and Outotec were gold sponsors, and LG sponsored a keynote session. Rio Tinto sponsored the conference dinner and Qenos sponsored the poster prize.

SNF Australia sponsored the conference barista and judging by the length of the queue the coffee was appreciated by the delegates.

The conference exhibitors were Instron, Kyoto Electronics, MEP Instruments, Rheology Solutions, Springer and TA Instruments.

Conference delegates

The conference was attended by two hundred and seven people from nineteen countries. As illustrated in the figure below, the majority of these delegates came from Australia, Japan, China, South Korea and the United States of America.



Conference dinner

The conference dinner sponsored by Rio Tinto was held in the Melbourne Aquarium which holds close to 10,000 creatures including Australia’s largest collection of Sub-Antarctic penguins, the world’s largest collection of Sea Horses and the only Elephant Sharks (Australian Ghost shark) in captivity.



Unfortunately the exhibition tank located beside the dining area had to be drained due to technical issues. Therefore, the conference delegates started the evening with music and drinks in the main exhibition area, a 2.2 million litre oceanarium, which houses sharks, sting rays along with up to 2,000 marine creatures. The oceanarium experience was enhanced by a presentation given by an aquarium staff member.

The following photographs show some of the delegates at the conference dinner.





Mark Coghill, representing the society committee, presented the Australian Society of Rheology Medallion to Professor Tam Sridhar. Professor Sridhar is the fifth recipient of the medallion which is awarded by the society to Australian rheologists who are internationally recognised for their contribution to rheology science and technology, and their contribution and service to the society.



The Australian Society of Rheology Medallion.

Later in the evening Hiroshi Watanabe presented a Cloisonné (an art craft glazed with water glass on a metal base) from the Society of Rheology, Japan, to honour the Australian Society of Rheology's 30th Anniversary. The Cloisonné was received on behalf of the society by Dr. Rahul Gupta, who was recently elected as the society's president.

Pacific Rim Conference on Rheology

The Pacific Rim Conference on Rheology has been held every four years since 1994:

Year	Location
1994	Kyoto, Japan
1997	Melbourne, Australia
2001	Vancouver, Canada
2005	Shanghai, China
2010	Sapporo, Japan
2014	Melbourne, Australia



The location of the 7th Pacific Rim Conference on Rheology is currently being discussed by the potential host rheology societies, and will be announced in due course.

This conference summary was prepared by Mark Coghill and Paul Slatter, ASR committee members.

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