



Australian Society of Rheology

# Rheo-NEWS

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March 2005

## INSIDE THIS ISSUE:

ASR Council	1
Announcement	1
Forthcoming events	1
Message from the President ASR	2
Message from previous editor	2
Report from the Congress 2004	3
Student Member - Biography	4
Rheo-Puzzle	4

## ASR Council, 2004-2005

The ASR Council, elected at the AGM, April 2004

Ivan Ivanov

Billy Todd

Shane Usher

Ravi Jagadeeshan

Masud Khan

Andrew Chrissy

Sumanta Raha

Alex Lubansky

Jonathan Foong

The Council officers are:

**Peter Scales**

**President**

**Pat Griffin**

**Vice-President**

**Rahul Gupta**

**Secretary**

**Peter Davis**

**Treasurer**

**Justin Cooper-White**

**Past president**

### Statement: New Council—goals 2004-2005

- Benefits for the members
- Industrial links
- Excellence in education and training
- Starting point for a career in Rheology

## Announcement: Australian-Korean Rheology Conference 2005

Cairns, 17th to 20th July 2005



The third Australian-Korean Rheology Conference will be held in Cairns, Australia on 17th to 20th July 2005. The conference is organised by the Australian Society of Rheology and the Korean Society of Rheology. It provides an international forum to showcase rheological research in Australia, Korea and the broader Pacific region. All scientists and engineers interested in rheology are invited to participate in this conference.

The Conference web-site address is:

<http://www.cheque.uq.edu.au/AKRC05/index.htm>

Information about the venue can be found at:

<http://www.cairnsconferences.com.au/AKRC05#>

More details on page 4!

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## Forthcoming events

### AGM 2005

ASR annual Dinner and AGM will be held on Thursday, 10th March, starting at 6:45pm. ASR members and friends are invited to attend and participate. Please contact our Secretary for updated information.

### Workshops

International Workshop on "Polymer Nanocomposites - Recent Developments and Applications" presented by RMIT Rheology and Materials Processing Centre and supported by ASR will be held on 23rd-25th May. For full details go to:

<http://www.rmit.edu.au/rmpc>

or contact our Secretary.

## Renew your membership No late fees !

you can download the membership form at:

<http://www.rheology.org.au/appform.asp>

Fill the form and mail it to Peter Davis

App. Physics, RMIT University, GPO Box 2476V  
Melbourne VIC 3001

New members welcome

## Message from the new president ASR

Your Membership is important to us and the ASR Committee is developing some new and exciting plans for the future of the ASR which will give you greater benefits of Membership.



*President ASR  
Prof. Peter Scales*

Some of our plans include:

- Enhanced ASR website
- On-going &

expanded Lecture & Education Program

- International Rheology Conference planned for July 2005



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*Rheo-NEWS*



## From the previous Newsletter editor

### Revival of the ASR Newsletter

*Contemplations by Paul Grossman*

I welcome the revival of the ASR Newsletter. A vibrant society should maintain close contact with its membership and provide information and mutual stimulation. A website is one option, a newsletter another and they are not mutually exclusive.

Our Society has issued news to its member in the past. The Branches of the BSR in the years 1960 to 1983 issued at times circulars and news as well as the BSR Bulletin which kept them in touch with events overseas. After the founding of the ASR in late 1983 the "Australian Society of Rheology Newsletter" was published for the next 9 years, under the editorship of Fred Koshir and others. From July 1998 to July 2002 Peter Uhlherr (and later Alfred Uhlherr) and I produced a Newsletter.

Not all members will read all of the contents of each issue. The challenge is to stimulate readers. Frequency of publication is an important consideration. During my time as editor I could not cope with more than two issues a year (and later only one) and I had to concentrate on matters that did not lose relevance quickly. The new editors may find it preferable to issue only a couple of pages each time but go to print more frequently to be able to run topical news.

I am looking forward to the new publication and wish the editors well.

### A brief biography of Paul Grossman

Paul was born in 1924 in a provincial town in the then Czechoslovakia (now the Czech Republic). His schooling was interrupted because of the country's occupation by Nazi Germany and he entered an apprenticeship with a joiner and cabinet maker. Increasing persecution culminated in three years in a concentration camp but Paul was fortunate to survive. After liberation in 1945 he completed a 4year course in physics at Charles' University in Prague, but in 1949, with the country then under communist rule, he decided to leave, unwilling to live again under severe repression.

Arriving in Melbourne in early 1950 Paul found a position with an electronics firm, but a year later he joined the CSIRO Division of Forest Products where he was introduced to rheology. He studied creep, stress relaxation and vibrational properties of wood and tried to find theoretical relations that could predict behaviour. Paul gained a MSc from Melbourne University for a thesis on the Rheology of Wood. In 1956 he was fortunate to obtain a studentship to Cambridge University enabling him to work towards a PhD under Karl Weissenberg. This was a most

stimulating time. After returning to Australia he resumed work with the CSIRO on rheology and other projects as Senior and later Principal Research Scientist until retirement in 1987.

While in Cambridge Paul had joined the British Society of Rheology and attended the 1958 International Congress in Bad Oeynhausen, Germany. Back in Melbourne he initiated moves to found an Australian Branch of the BSR and became founding Secretary and later President of the Victorian Branch. He was also active in moves to found an independent Australian Society and became the first President of the ASR.

The Society made him an Honorary Member. He is also a Fellow of the Institute of Physics, the Australian Institute of Physics and the Institute of Wood Science.

Paul is married and has a son and a daughter. Among his hobbies is music and he is an amateur pianist, organist and clarinet player. In 1962 he became a foundation member of the Victorian Branch of Amnesty International and has held various position in that organization remaining active to this day.

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## ASR Lecture Series

ASR Lectures are usually held at the Chemical and Biomolecular Engineering Theatre, University of Melbourne, Parkville. The presenters are rheologists from both industry and academia. We are especially proud of our student members who gave many excellent presentations. Some of the topics in 2004 were:

"Application of Rheology in the Plastics Industry", Dr Predrag Micić, *Qenos*;

"Industrial Applications in the Field of Rheology", Dr Tim Kealy, *Rheology Solutions*;

"Complex Fluids in Microfluidic Devices", A.Prof. Justin Cooper-White, *University of Queensland*.

The new Programme will be announced after the AGM in March. If you are interested in a specific topic, or wish to present please contact our Secretary

## Report from the International Rheology Congress 2004

Our correspondent, Tanya Kairn (App. Physics, RMIT) was impressed by the organization and content of The XIV International Congress on Rheology 2004

*This is her story:*

The 14<sup>th</sup> International Congress on Rheology had everything you could possibly need from a conference. It had a bunch of really terrific people to meet; a suitable number of superstars to gawk at; a really friendly atmosphere; brilliant events; organisation like clockwork; excellent accommodation; a massive high tech conference centre; and a fascinating location. Oh, and a goodly amount of actual science.

Your impressions from a conference, meeting or workshop can be interesting to others ... share them with us!

The science was something astounding – in volume, range and depth. By the end of the week I had fallen into the habit of choosing to go to the parallel sessions presented by people I had met. Having met people from a very wide range of disciplines, I was led to witness some really diverse presentations (aggregation of glass beads at a liquid-liquid interface, polymer droplet deformation under shear, DNA molecule stretching, and more). I had started the conference determined to go to presentations on topics affecting my own

work, which includes a PhD project related to colloid science and micro-fluidics as well as a separate engineering project focused on polymer nanocomposites and macroscopic flows. So I raced from seminar to seminar (modelling and measurement of microflows through contractions, characterization of exfoliation in nanocomposites, microvalving for MEMS, polymer-clay mixing methods, and more). I took frantic notes and wore all possible hats at once. I got deliciously confused and overwhelmed and had a wonderful time. People would ask me what my interests were and then blink at me as I waved my many hats around, until I figured out how to answer that question with one word. The day before the end of the conference a cunning researcher from Swansea eventually foiled me by asking "What are you interested in?" then immediately adding "And 'rheology' is not an answer."

The delegates made a really terrific group of people, about whom I can only summarise and generalise, and maybe superlative-ise. There were the first-time student presenters who brought with them fun and laughter as well as expertise and enthusiasm. And there were the proper grown-up academics who were incredibly kind and generous to we laughing students. There were people from the Northern, Southern, Eastern and Western hemispheres. Australians were present in abundance. At the first big plenary session on the first

day, I attempted to hide myself away in a back corner only to discover later that I was sitting entirely surrounded by people from Melbourne. (Hint: if in future you are trying to find the Melbournians in any given lecture theatre, it seems we naturally wash up against the back left-hand corner.) If there was one thing that this diverse group of people had in common (and 'rheology' is not an answer), it might have been a background in engineering. There were engineers and engineers and engineers and chemists and chemical engineers. I will admit it took me longer than you'd expect to figure out why I was repeatedly asked if I was from chemistry. Also, coming from a discipline that promotes itself with phrases like, "benefiting humanity" and "doing great good for the human race", I at first misunderstood the piece of advice given to me by my neighbour at the formal dinner: "It's time you started thinking about contributing to the species", he said. Engineers – you can't take them anywhere. But if you do take them somewhere, take them to Korea... And take me too?



# RheoNEWS

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ASR

**The Australian Society of Rheology** is open to all who are practising, or have an interest, in the field of Rheology.

A principal aim of the Society is to form a bridge between academic research and industry.

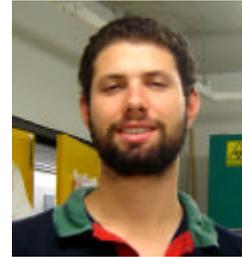
Please visit our new web-site:

<http://www.rheology.org.au>

\* More features expected soon! \*

## New student Council member – Alex Lubansky

Why did I decide to do a PhD in rheology? Sure, I could play revisionist historian and claim that I always wanted to be rheologist. I could point to those early experiments on drop formation of polymeric liquids as a baby. And to all those materials which yielded (or fractured, shattered, broke, disintegrated etc.) under my hands as a toddler. I always enjoyed my relaxation time as a child, and my parents will attest to me applying certain levels of stress and strain as a teenager. I could, but I don't think anyone would believe me. I can't remember what I was thinking 3 years ago when I decided to do my PhD in rheology, but it seems like a good decision in hindsight (I reserve the right to revise that after I have written and submitted my thesis!). I like being involved in a science which I can explain to my friends.



Alex Lubansky is doing his PhD at the University of Melbourne, Dept. of Chemical and Biomolecular Engineering

Why we want shear-thinning paint or sunscreen. Why that cheap sweet-chilli sauce is stringy (they put way too much xanthan in it). Why jelly wobbles. And, most importantly, why the saliva they've just spat onto their fingers forms a filament even though it feels like water in shear. If we weren't meant to do rheology we wouldn't be born with a CaBER on the end of our hands.

(cont. from p.1) The **Australian-Korean Conference** provides an opportunity to meet, to listen and to exchange the latest research findings and industrial applications of rheology.

Keynote lecturers and contributed papers will address the following areas of Rheology:

- Polymer melts and composites
- Polymer solutions and gels
- Microstructural modelling
- Suspensions and emulsions
- Rheometry
- Food and industrial rheology
- Non-Newtonian fluid mechanics

The Plenary speakers will be Internationally acclaimed rheologists, just to mention Tam

Sridhar (Monash University), S J Lee (Seoul National University) and David Boger (University of Melbourne).

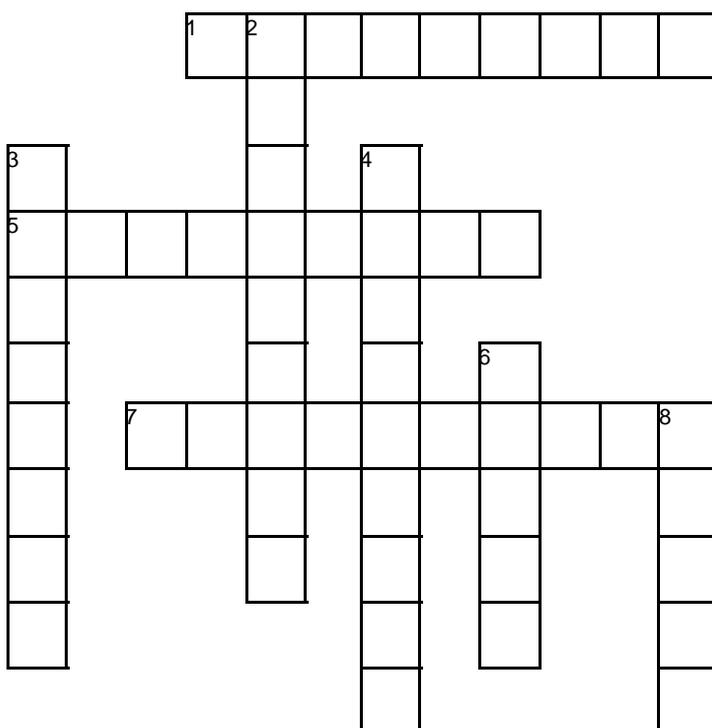
Extended abstracts of all accepted presentations will be published in the form of a book of abstracts. Authors will be encouraged to submit their complete papers for review and publication in the Korean-Australian Journal of Rheology.

### Important Dates

31st March 2005 - Submission of Abstracts

30th April 2005 - Notification of Acceptance of Abstracts

<http://www.cheque.uq.edu.au/AKRC05>



## RheoCross

Please note: this is not an application of the Cross-model for zero shear viscosity. Check your knowledge and have some fun solving our CROSS-WORD puzzle!

Across

- 1 Type of fluid
- 5 Non-linear behaviour, strain -
- 7 Kind of time-dependent rheological behaviour

Down

- 2 Type of deformation, elongation
- 3 Behaviour at high shear rates, shear
- 4 Resistance to flow
- 6 Type of flow
- 8 Minimum stress to flow

Solution in next issue, cheers :-!