

# HSR Newsletter, 2007\*

A. Alexandrou and A.D. Gotsis

January 7, 2008

## I HSR in 2007

With this newsletter the HSR committee wishes to all our members a happy and productive new year, 2008. The year 2007 that has just ended was a reasonable year for the Hellenic Society of Rheology. A biennial HSR meeting was organised together with the XV<sup>th</sup> International Workshop on Numerical Methods for non-Newtonian Flows. There were awards given to some members. The number of HSR members who serve as editors of important rheological journals has increased. Finally, very few of us have paid our HSR membership dues this year and we would like to ask everybody to do so together with the dues for 2008.

## 2 Vlachopoulos received the Mason Award from the Canadian Society of Rheology



**Prof. John Vlachopoulos**, one of the founding members of our society, has received the "Stanley G. Mason award" of the Canadian Society of Rheology for his contributions to research, industrial consulting and teaching on the rheology of polymers. The award is named after Canada's rheology pioneer, the late S.G. Mason, renowned for numerous contributions in the microrheology of suspensions and particulate flows. The award is presented every other year. Previous winners include J.M. Dealy, P.J. Carreau, M.C. Williams, and D.F. James. Evan Mitsoulis, one of Vlachopoulos' first PhD students and Professor now at the National Technical University of Athens, gave the talk at the award ceremony on Nov. 23, 2007 at McMaster University, Hamilton, Ontario.

\*Do not forget to check our web page (<http://esperia.iesl.forth.gr/~hsr/HSRwebpage.html>) for information and news

John Vlachopoulos was born in Volos and studied Chemical Engineering at the Technical University of Athens (EMII). He received a D.Sc. at Washington University in St. Louis, Missouri. He has been in the faculty of McMaster University since 1968 (yes, this is almost forty years to date). He is director of the Centre for Advanced Polymer Processing and Design (CAPPA-D). His main interests are in polymer processing and its modeling. Over the years he has supervised 17 PhDs and 32 Masters. Eight from his students have become professors in several Universities around the world (McMaster, AUTH, NTUA, Waterloo, Amir Kabir, Queen's, Calgary and Chang Gang).

Vlachopoulos has published more than 123 papers, has presented around 100 papers in conferences, he is the co-editor/author in 6 books and lecture notes, he has contributed chapters to 13 books and several articles of general interest. He has written over 100 confidential consulting and research reports to corporations and there have been over 300 presentations given by students under his supervision (data from Mitsoulis, 11/2007).

Vlachopoulos has been very prolific in giving seminars and presentations in several languages (6 different languages so far and the list is growing): english (several hundred presentations), german (dozens), french (dozens), spanish (dozens), greek (a few), portuguese (two), and is getting ready to lecture in a couple of more languages. We have personally heard him trying to communicate with reasonable success in dutch, italian and chinese (and somewhat less success in slovenian). John has presented his Intensive Short Course on Polymer Rheology and Processing 61 times since 1987 in 16 countries (the 62nd will be presented in Brussels, Belgium, the 63rd in Valencia, Spain, the 64th in Burlington, ON, and the 65th in Bahrain in 2008).

One of the things that Vlachopoulos is known for is the software packages that he has developed. He has founded the company POLYDYNAMICS Inc., which sells now at least 10 different software packages for polymer processing, from a general-purpose FEM flow calculations package to specialised packages for extrusion, thermoforming, rheology etc.

We wish John Vlachopoulos the very best for the years to come with ever more awards, new ideas, papers, software packages and world-wide seminars, the things that he likes to do the most.

### **3 XVth International Workshop on Numerical Methods for non-Newtonian Flows**

E. Mitsoulis and V. Mavrantzas organised the XV<sup>th</sup> International Workshop on Numerical Methods for non-Newtonian Flows (XV<sup>th</sup> IWNMNNF) in Rhodes, on June 6 – 9, 2007. The workshop (and summer weather on the island) attracted many participants from quite a few countries and was a big success. Details are given at p. 354 of *Applied Rheology* **17** (2007) — see the following page.

## Numerical Methods for Non-Newtonian Flows – XV<sup>th</sup> IWNMNNF 2007

RHODES, GREECE  
JUNE 6 – 10, 2007

Picture 1 (left above): Rhodes Island, Greece, was the meeting place for the XV<sup>th</sup> International Workshop on Numerical Methods for Non-Newtonian Flows, June 6 – 10, 2007. Pictured is the harbor with the Medieval Castle in the background.

Picture 2 (middle above): Roger Tanner of the University of Sydney, Australia, with a plenary lecture entitled “The Changing Face of Computational Rheology”.

Picture 3 (right above): Delegates during the poster session of the Workshop.

Picture 4 (left below): The head table during the banquet of the Workshop. From left: Mike Graham (Organizer of the next Workshop in 2009 in N. America), Martin Kröger, Gerrit Peters, Vlas Mavrantzas (Co-Chair of this Workshop), Martien Hulsen, Roland Keunings, Roger Tanner.

Picture 5 (right below): Delegates during the banquet of the Workshop.

The XV<sup>th</sup> International Workshop on Numerical Methods for Non-Newtonian Flows (XV<sup>th</sup> IWNMNNF 2007) was held on the island of Rhodes, Greece, in June 6 - 10, 2007. Since their inception in 1979, in Providence, Rhode Island, USA, the workshops are rotated biennially between North America and Europe. This was the first time the meeting was held in Greece. Rhodes Island was a proper destination, as the meetings have come a full circle after almost 30 years of frantic activity, which have seen workshop meetings in castles, lakes, islands, seashores. Rhodes, as the capital of the Dodecanese Islands, combines all of the above, and has been a place of tourism and holidays since antiquity.

The XV<sup>th</sup> IWNMNNF was by all measures a truly international event, drawing around 60 scientists and engineers from 18 countries around the world. The Workshop included a plenary lecture by Roger Tanner, from University of Sydney, Australia, and 7 thematic sessions. A total number of 60 papers were divided into two categories: 50 oral and 10 posters. The Workshop promoted and facilitated scientific exchange, collaboration and interactions between participants as well as their organisations in advancing non-Newtonian Fluid Mechanics and Computational Rheology to higher levels of success. According to its reputation as the “Island of the Sun”, Rhodes provided that and much more. Terrific beaches together with ancient and medieval sights that attract people from around the world. The international delegates had the chance to experience some of these important attractions, by going on a half-day excursion to ancient Lindos.

On the scientific part, sessions included: viscoelastic suspensions, multiscale modeling and molecular simulations, viscoplastic and viscoelastic fluids – modeling and simulation, viscoelastic flow instabilities, complex materials – experiments and modeling, and turbulence in complex fluids. The overwhelming conclusion from these sessions was that the nature of the Workshop, after almost 30 years of existence, has definitely changed, and researchers have moved to many new and exciting fields. New challenges have appeared and very promising research fields have emerged. As Professor Tanner pointed out in his plenary talk entitled “The changing face of computational rheology”, numerical methods have been moved now to molecular and even atomistic and quantum levels of computations for non-Newtonian fluids.

A highlight of IWNMNNF-2007 was the banquet, which took place on Saturday night, 9 June 2007, featuring some late-night reminiscences and anecdotes from early workshops by delegates who had participated in those. Pictures taken from the banquet and other moments during the days of the Workshop can be found in the web page of the Meeting: <http://www.complexfluids.ethz.ch/IWNMNNF2007>. The next Workshop will take place somewhere in North America in the summer of 2009, and the Organizers are Mike Graham and Patrick Doyle.

Evan Mitsoulis (Chair)  
Vlas Mavrantzas (Vice-Chair)



## 4 The 5<sup>th</sup> International Conference of HSR



The 5th International Conference of the Hellenic Society of Rheology (HSR 2007) was held in Rhodes on June 5–9, 2007. The programme and the book of abstracts have been published at the HSR web site.

HSR meetings are rotated every 3 years among various locations around Greece and Cyprus. This was the 5th meeting since the foundation of the Society in 1996, when its 1st meeting was held in Nicosia, Cyprus. The 2nd meeting was held in 1998 in Herakleion, Crete, the 3rd meeting in 2001 in Patras, and the 4th meeting in 2004 in Athens. Rhodes was chosen for this meeting, as it is the capital of Dodecanese Islands, it boasts many historic sites as well as sun, sea and excellent facilities, and it has been a place of tourism and holidays since antiquity.

Despite its rather low number of participants, the HSR 2007 Meeting was a very special meeting as it was combined with XV<sup>th</sup> IWNMNNF. The HSR meeting started with sessions on experimental rheology and rheometry, and continued with computational rheology, where many Greek rheologists contributed. The combined Conference included 2 plenary and 55 oral lectures and 10 posters, out of which 1 plenary and 14 oral lectures and 6 posters were given by members of HSR. The scientific papers were presented under 8 major themes. True to its character, the Conference promoted and facilitated scientific exchange, collaboration and interactions between participants as well as their organisations in advancing science and technology based on rheology.

We thank all the sponsors of this Meeting for their generous support. We are indebted to the members of the Organising and Scientific Committees and other individuals for their commitment and hard work in order to make this Meeting a successful event. — (E. Mitsoulis)

## 5 Awards at the Workshop on Viscoplasticity in Switzerland

The HSR was successfully represented at the workshop on Viscoplasticity Theory and Applications, which was held in Monte Verità, Switzerland — roughly 10% of the participants were members of our society! Below is an excerpt taken from the workshop's summary ([lhe.epfl.ch/monte/monte-verita.pdf](http://he.epfl.ch/monte/monte-verita.pdf)):

From the 14th to 18th, October 2007, a workshop gathering 49 participants from 13 countries was held in Monte Verita, a marvellous place in the Italian-speaking part of Switzerland, with spectacular scenery on

lake Major and the city of Locarno. The meeting was the follow-on of an earlier workshop organised in Banff (Canada) in 2005. This was the opportunity to have a closer look at recent achievements in this hectic field and try to collectively think of future developments. We also paid homage to the Greek and Cypriot communities for their enduring efforts in viscoplastic fluid mechanics. During an enjoyable banquet, Evan Mitsoulis was awarded the Bingham Fluid Metal (not to be confused with the more auspicious prize) for his research on computational aspects of viscoplasticity, while John Tsamopoulos was rewarded with a prize for successfully computing the shape of the yielded surfaces around bubbles in Bingham fluids. The next workshop will be held in Cyprus in October 2009.



We hope HSR members will make a note of the next meeting in Cyprus in 2009. Proper announcements with all the details and deadlines will be posted in our web site and sent to everyone at a later time.

## **6 Some 2008 meetings and their deadlines**

Some of the international meetings in 2008 that may interest the Rheologists of our Society are listed below.

1. XVth International Congress of Rheology, August 3–8, 2008, Monterey, CA ([www.rheology.org/ICR2008/](http://www.rheology.org/ICR2008/)).

The Congress is organised by the Society of Rheology, convenes every four years and brings together the world's leading rheologists to present the latest advances and developments in this field. The Congress will include opening and closing plenary lectures, fourteen keynote lectures (including the Bingham lecture) by eminent rheologists, contributed oral presentations organised into sixteen mini-symposia, and a poster session. Two short courses will be offered on the weekend before the Congress, August 2 - 3, 2008.

2. 24th Polymer Processing Society Conference, June 15–19, 2008, Salerno, Italy ([www.pps-24.com](http://www.pps-24.com)).

Extrusion, Coating & Joining, Films & Fibres, Injection Moulding & Moulds, Blow & Rotational Molding & Thermoforming, Thermosets & Reactive Processing, Mixing & Compounding, Rheology & Rheometry, Modeling & Simulation, Morphology & Structure Development, Polymer Alloys & Blends,

Processing of Composites & Filled Systems, Elastomers & Elastomer Processing, Process Monitoring, Control & Sensors, Green Polymers, Reprocessing & Recycling, Foam Processing & Applications, Precision Injection Moulding, New Moulding Technologies, New Processes & Testing Methodologies, Nano-Structured Materials, Properties after Processing, Polymers for Biomedical & Pharmaceutical Applications, Electronics & Optics Related Polymers, Polymers for Advanced Applications.

The deadline for registration is 15th April, 2008: An extra fee (€ 70) will be charged afterwards. The fees are: € 150 Students and € 450 PPS members.

3. 7th Panhellenic Polymer Conference, September 29 – October 1, 2008, Ioannina, Greece ([www.polyconf7.gr](http://www.polyconf7.gr))

This conference is organised by the Hellenic Polymer Society (EAEP) and aims to promote the activities of the Greek research groups working in the area of polymers. The conference programme includes invited lectures, oral presentations and poster sessions in established and novel subjects. Special emphasis will be given to the posters, where a special prize will be awarded.

Some subjects that will be covered are:

Polymer synthesis and characterisation; hierarchical structures in polymer and copolymers; polymer dynamics; polymer theory and simulation; surfaces and interfaces; biopolymers, polypeptides and proteins; polymer colloids; composites, nano-composites, nano-structural materials; advanced polymers and applications in biomedics, electronics and optics; polymer rheology and processing. — The deadline for submissions is June 15, 2008.

## 7 Editors in rheological journals

In addition to the above mentioned awards, more Greek rheologists have received acknowledgements of their scientific impact. Prof. D. Vlassopoulos of the Dept. of Materials Science at the University of Crete, and of the FORTH-IESL, one of our founding members, has been appointed editor of the *Rheologica Acta*. There are also other members of our Society who hold editorial positions in several journals. E.g. E. Mitsoulis and J. Tsamopoulos are editors at the *Journal for non-Newtonian Fluid Mechanics*, Spiros Anastasiadis is an editor at the *Journal of Polymer Science, Part B, Polymer Physics*, etc.

## 8 Further...

Dear members of HSR, please check your email addresses at the society's web page and send any corrections to "gotsis@science.tuc.gr". Please send me any material (including "strange" ideas, proposals, announcements etc.) that you think it may be interesting for HSR and suitable to be published at the web page. I am planning to create a database with the professional information and interests of the members of HSR. This will include individual expertise, research interests, publications, laboratory equipment that one has access to and current professional position. If there are no objections, we could publish all this stuff in our site in an effort to network the industrial needs with the available expertise and problem solving capabilities of the Greek rheologists. Please send me your thoughts on this. — ADG