

# Conference Report III

## BALKAN SEMINAR ON RHEOLOGY AND 9TH NATIONAL WORKSHOP ON RHEOLOGY

SOFIA, BULGARIA  
APRIL 22ND - 25TH, 2001



For the first time, the Bulgarian Rheological Society (BRS) organized Balkan Seminar on Rheology. It was jointed with 9th National Rheology Workshop. The co-organizers of these meeting were the Union of Scientists in Bulgaria (USB) and the Central Laboratory of Physico-Chemical Mechanics (CLPhCM), a branch of Bulgarian Academy of Sciences (BAS). This event was held in April 22-25 of this year in Sofia, Bulgaria. It attracted rheologist from Balkan countries and guests of honor from five European countries. Approximately 80 participants including 15 graduate students and 30 undergraduate students attended and discussed oral and poster presentation. The official seminar language was English.

The scientific program included five invited lectures, given by Prof. K. Walters, Prof. A. Malkin, Prof. Ya. Ivanov and Assoc. Prof. R. Kotsilkova and 28 titles spanning of five different topics (Suspensions and Colloids, Polymer Melts, Smart Materials, Process Engineering and Biorheology). The largest number of papers was presented in the areas of Suspensions and Colloids and Process Engineering. The papers were published in a 208-pages "Proceedings" (editor Prof. Yatchko Ivanov).

The Seminar was officially opened by Prof. Ya. Ivanov, President of BAS and Chairman of the Organizing Committee. After that the greetings by Acad. I. Yuhnovsky, President of BRS, Prof. N. Genov, vice-president of USB and Assoc. Prof. N. Barovsky, Scientific Secretary of CLPhCM were expressed.

The President of the International Committee on Rheology Prof. K. Walters, University of Wales (UK), presented the first lecture on

"Lessons from History" dealt with history of rheological science. The precise investigation, supplemented with impressions of personal acquaintance with eminent rheologists, was loud applauded and it served as good basis of Seminar work. After short break Prof. K. Walters introduces "The importance and the measurement of lubricant rheology". This lecture provoked an interesting discussion, which exceed the bounds of rheology.

In the afternoon, the second session was opened by the invited lecture of Prof. A. Ya. Malkin (Russia) taken a very interesting and systematical view ("a modern look") of the "Non-Linear Phenomena in Rheology". After this lecture an equipment exhibition by ThermoHaake provided the opportunity to view the newest developments in rheological measurements devises and advanced software. Mrs. Dr. C. Küchenmeister demonstrated the work with the modular high-tech rheometer RheoStress 300. At end of this day a poster session was carried out. The studies mainly of young scientists and graduated students dealing with various aspects of food rheology, of polymer melts rheology, biorheology and even of rheology of earth massive were presented. The most discussed posters were "Rheological Properties of Protein Polysaccharide Mixtures" by Assoc. Prof. S. Derkatch, Dr N. Voronko and Prof. V. Izmailova (Russia), "A Study of Fiber Suspensions in Convergent Flow" by Res. Assoc. D. Pashkouleva, and "Rheological Heredity Theory Applied to Creep of Earth Massive" by Prof. I. Minchev, Prof. Ya. Ivanov, and Res. Assoc. S. Miteva. The first day ended with official welcome party at the restaurant of House of the Scientists with Bulgarian foods and wines.

The two sessions on the second day were occupied with Bulgarian scientists. In the morning the session was opened by Prof. Ya. Ivanov, CLPhCM, with his invited presentation of "Flow Behavior of Electro- and Magnetorheological Fluids" followed with short discussion. After that Prof. J. Y. Hristov, University of Chemical Technology and Metallurgy - Sofia presented two studies dealing with rheological parameters and experiments of aerated magnetizable particles under gas fluidizat. The lecture of Assoc. Prof. R. Kotsilkova, CLPhCM - BAS, on "Rheology of Intercalated and Exfoliated Polymer/Layered Silicate Hybrids" highlighted fundamental aspects of nanotechnologies based on use of specialty



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nanosized particles. Assoc. Prof. D. Partov, Assoc. Prof. V. Kantchev, Higher School of Constructural Engineering - Sofia, and Assoc. Prof. B. Straka Brno University of Technologies, (Czech Republic), showed in their study how to respect the rheological properties of the wood. Dr V. Stoyanov, Res. Assoc. P. Radev, and Prof. Ya. Ivanov, CLPhCM, illustrated in their presentations "Rheological Behavior of Cement Pastes with Plasticizing Air-entraining Admixture" difficulties to characterize the rheological behavior of cement pastes containing such admixtures. The last talk of this sessions was given by Res. Assoc. V. Zvetkov, CLPhCM – BAS, and dealt with "Comprehensive DSC Kinetics of the Epoxy-Aromatic Diamine Reactions" as "The first Step in Successive Rheokinetic Solutions".

At the third day the scientific program started with Res. Assoc. E. Stiakakis, Prof. D. Vlasopoulos, F.O.R.T.H., Institute of Electronic Structure and Laser, Crete, (Greece) and Prof. J. Roovers, Institute of Chemical Process and Environmental Technology, Ottawa, (Canada), and their paper "Gelation Phenomena and Thixotropy in Soft Sphere Systems", followed by Assoc. Prof. S. D. Vlaev and Res. Assoc. P. Staykov, with presentation of "Analysis of the Drag-Reducing Effect of Blade Shape on Impeller Performance in Stirred Power Law Fluids". Res. Assoc. V. Samichkov, Prof. Ya. Ivanov, CLPhCM, Res. Assoc. E. Hasan, Prof. Ch. Tsvetanov, Institute of Polymers – BAS, showed shear thickening and shear thinning behavior of "Smart Thermoassociative Aqueous Solutions of Poly(Ethylene Oxide)". After the break the interest of the participants was focussed on film "Non-Newtonian Fluids" by University of Wales, Institute of Non-Newtonian Fluid Mechanics, presented by Prof. K. Walters. This movie demonstration crowded the seminar hall with scientists from several scientific institutions. The impressions of this film were superb. The presentations of last session dealt with biorheology. The most prominent lecture was "Arterial Bypass Grafting: Proper Choice of the Graft Diameter" by Prof. St. Stoytchev, Institute of Mechanics – BAS. The last presentation of the Seminar was "An Evaluation of Dissolution of Biodegradable Grafts Using Characteristics of Pulse Waves in Artery/Graft System" by Res. Assoc. M. Kirilova, Institute of Mechanics – BAS.

During the Closing ceremony of this event, some questions from held inquiry were summarized. It was taken a decision that the next 10th Jubilee National Rheology Workshop and the Second Balkan Seminar on Rheology will be held in Varna near the Black Sea. The Bulgarian Rheological Society would be appreciated to welcome participants from all countries.

The participants and organizers could be well satisfied with the considerable success of the Balkan Seminar on Rheology. Every scientist departed with new knowledge, new motivation and new scientific contacts.

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