

PREFACE

The Third Conference on Stereology in Materials Science, STERMAT'90, was held in Szczyrk, a winter sport centre in South Poland, from 2nd to 5th October 1990. This series of conferences was initiated in 1983 in order to promote closer contact and cooperation between Polish stereologists. The observed rapid growth in international scientific exchange prompted us to open our local meeting for all the stereologists working in the field of materials science. The conference language was changed into English and information about the event was given in the ISS Newsletter.

Finally the conference had 90 attendants, 11 of them from abroad. The conference guests came from Czechoslovakia, France, Germany, Hungary, United Kingdom, USA and USSR; among them were the ISS President, Dr. Jean-Louis Chermant and one of the ISS-founders, Prof. Ervin E. Underwood. During the four conference days 34 contributions were presented in oral and poster form and discussed, discussed, discussed... This large contribution of discussion seems to be the largest success of the meeting.

Thanks to the conference sponsors we were able to balance the conference fee at a reasonably low level and include an attractive social programme. The conference was sponsored by: Central Research Programs No. 2.4 and 02.08, Institute of Metallurgy - Academy of Mining and Metallurgy, Institute of Materials Science - Silesian University of Technology, Quality Steel Plant "Batory" and producers of the scientific equipment: MS2I - Comef, Overseas Marketing Corporation Ltd. - Joyce Loebel, Opton, Rank Xerox and Reichert; these enterprises took also part in the scientific equipment exhibitio.

The heavy organisation work was done by many, many people from the Organizing Committee who devoted a lot of their energy and private time to the final success of the meeting. The most responsible work was done by my colleagues: Dr. J. Cwajna, Dr. K. Satora and Dr. L. Wojnar.

Thanks to the courteous invitation from Prof. Miroslav Kališnik, Editor-in-chief, we have the pleasure to present the selected contributions submitted for STERMAT'90 in this special issue of Acta Stereologica. As the majority of conference guests have prepared for our meeting their review papers which seems to be interesting for the whole Society, they are selected for this issue. Unfortunately, the volume of Acta Stereologica disabled us to publish all the valuable works. However, a limited number of Conference Proceedings (in English) is still available. All the interested in purchasing them are asked to send their inquiries to Prof. J. Ryś, Instytut Metalurgii AGH, Al. Mickiewicza 30, 30-059 Kraków, Poland. Below you can find the contents of STERMAT'90 Conference Proceedings:

Aboav DA. The stereology of the intergranular surface of metal.

Adrian H. Statistical characteristics of selected polyhedra.

Berkowski L, Pachutko B. The relations between the parameters of structure and selected mechanical properties of 6-5-2 steel.

Bodziony J. Polish stereologists.

- Bossert J, Ondracek G. Stereology in quantitative microstructural analysis: the orientation factor.
- Chermant JL, Coster M. Granulometry and granulomorphology by image analysis.
- Cwajna J, Richetr J, Szala J. Stereological parameters of carbide particles and particles of conventional and non-ledgeburitic high-speed steels.
- Czarski A, Ryś J. Estimation of true interlamellar distance in pearlite.
- Dobielińska M, Frąckowiak W, Kachlicki T, Wachowiak A. Correction of spherical particles diameters distribution due to a shear effect.
- Horalek V. Contribution to dihedral angle measurement.
- Jeziorski L, Sławuta K. Simulation of real cross-section of particle population.
- Karaczan M, Luchowski L, Mrózek A, Porwof M, Rebajn W, Winiarczyk R, Janiczek J, Komenda J, Malec M, Wiederman J. BIOLAR-VIDEO interactive system for image analysis.
- Kasprzyk A. The arraignment of grains in polycrystalline structure (ferritic stainless steel).
- Kęsy B. Microstructure as arrangement of unitary phase parts and stereological parametres.
- Kęsy B, Ryś J. Dependence of the rolling contact endurance of bearing steel on the stereological parameters of carbide bands.
- Kurzydłowski KJ. On the use of some geometrical measurement to study the plastic deformation of polycrystalline materials.
- Kurzydłowski KJ, Przetakiewicz W. Studies of the distribution of plastic deformation in polycrystals by means of the grain area measurements.
- Kwieciński JK, Wyrzykowski J. Application of observations of the dislocation spreading in grain boundaries to the study of recovery and diffusion in grain boundaries.
- Maliński M, Szala J, Chropoński J. Quantitative description of grain size.
- Nitkiewicz Z. Quantitative phase analysis of ZnMnSi alloys.
- Novikov VJu. Microstructure evolution during grain growth. Stereological aspects.
- Pietrzak K, Ryś J. Quantitative relationships between the damping capacity and the graphite form in cast iron.
- Prokopski G. Application of stereology and fractography in estimating the fracture toughness of concretes.
- Przerada I, Bochenek A. Microfractographical aspects of fracture toughness of microalloyed steels.
- Ralph B. Techniques for the measurement of grain size distri butions during grain growth.
- Reti T, Czinege I. Shape description by trygonometric moments.
- Szala J, Maliński M. Some examples of modifying the binary images.
- Szymura S, Wysłocki JJ, Sojka L. The effect of Zirconium on the nature of non-metallic inclusions in Fe-Cr-Co permanent magnet alloys.
- Underwood EE. Directed measurements and heterogenous structures in quantitative fractography.
- Wienczek K, Hougardy H. Analysis of dispersed particles by test quadrat.
- Wojnar L. On some misunderstanding of fracture roughness parameters.
- Wolak Z, Dutka K. Purity of structural alloys steel used for mining chains and beyond furnace treatment.

Wysłocki J.J. Application of the stereological method to determination of domain-wall energy in $Dy_2Fe_{14}B$ compound.

Wysocka K. Effect of deoxidation method and casting temperature on quantitative description of Hadfield steel structure.

Prof. Jerzy Rys, Chairman of the Organizing Committee