

Preface

The International Symposium on Metallography "Metallography 2013" was held on 24 – 26 April 2013 in Stará Lesná in the beatiful surroundings of High Tatra Mountains, Slovak Republic. It was the grand 15th edition of the regular international symposium. The tradition of these conferences was established by Professor Ivan Hrivňák, the father of physical metallurgy in Slovakia back in 1969, and more recently they have been held at three-year intervals. They have featured as and still are important events for presentation of results achieved in materials science and engineering. The scope of the conference has long transcended the field of metal materials alone, and it is now a forum for presenting the latest research results as well as numerous modern materials and technologies.

At the turn of the 19th-20th century metallography was just beginning to show its usefulness. At that time there were no insights into the relation between microstructure (let alone substructure) and the properties of alloys, but the promoters of the new science such as J. B. Austen, E. C. Bain and J. R. Vilella could sense its huge potential. The development during the 20th century of further techniques beyond light microscopy for the investigation of metal materials and the introduction of new types of materials and technologies means that the capabilities of such microscopes have long been exceeded. Nevertheless, they still remain an indispensable research tool for today's materials specialists, particularly since their use has been extended to cover the immensely wide spectrum of new materials, as we can see in the range of contributions proposed for this conference.

Metallography, as an original group of research methods, has expanded in recent years to such an extent that with its classical and special techniques it covers a wide range of material sciences, and even reaches beyond its original border-line. It is not surprising, and I am very glad, that our original "family of classic metallographers" is widening to include materials specialists from various branches (e.g. archaeology, care of historical monuments, medical sciences...) and therefore it is becoming a wide community which is gaining – due to its multidisciplinary character – even stronger potential for new approaches, new technologies and new findings in fundamental research as well as in practical production.

This Conference has always had participants from abroad, but since the expansion of the EU, interest in it has definitely grown. Also the conference programme last conference was, it would say, overcrowded. For this reason we have divided the program into three parallel sessions. These sections heard a combined total of eight invited lectures, and five can be found at the beginning of these Proceedings. At the conference, most of the authors chose to present their papers orally, and the others were in the form of posters. All in all 168 scientists from 12 countries participated in the scientific programme. We have received 144 abstracts, of which 139 have been presented at the conference, and 123 are presented as papers here in the Proceedings – Special Issue of Materials Science Forum and most of them are very interesting in content and bring new knowledge to the science of materials.

I am very grateful to all our sponsors and a big vote of thanks must go to our principal sponsor, U. S. Steel Košice, s.r.o. The Conference Committee also wishes to acknowledge the assistance and encouragement that we have received from our co-organizers, many other individuals and organizations in the preparation of this event.

My special thanks are due to the Chairmen of International Scientific Committee Petr Zuna from Czech Republic and Kenji Ikeuchi from of Japan for the assistance in the selection of the invited speakers and also all members of this committee for their help and advice in the preparation of the Conference. Thanks are also due to all the session chairmen, who directed the programme. We are also very grateful to the reviewers, whose very consistent reviewing of manuscripts was of great help in improving the quality of many papers. I also owe my gratitude to the publishers of this journal for their willingness to deal with the papers of these Proceedings.

I am also very grateful to Anton Čižmár, rector of the Technical University of Košice, Peter Horňák, Dean of the Faculty of Metallurgy from Technical University of Košice and Martin Fujda, Head of Department of Materials Science of Metallurgical Faculty of Technical University of Košice for their help during conference preparation.

I am particularly thankful to the members of the Organizing Committee: Mr. Marek Vojtko – Secretary, Mr. Peter Horňák - Dean of the Faculty of Metallurgy, Mr. Martin Fujda – Head of Dept. of Materials Science, Mr. Pavel Bekeč, Mr. Marián Buršák, Mr. Miroslav Glogovský, Mrs. Mária Fedorová, Mrs. Mária Hagarová, Mrs. Viera Horáková, Mrs. Petra Lacková, Mr. Svätoboj Longauer, Mr. Miloš Matvija, Mr. Ondrej Milkovič, Mr. Ladislav Pešek, Mr. Martin Šebek, Mr. Pavol Zubko, Mr. Ruslan Shvab, Mrs. Mária Huráková and Mrs. Lucia Hrabčáková.

My special thanks are due to Mr. Marek Vojtko, conference secretary and Mr. Pavol Zubko, coeditor for their help not only with Conference preparation, but also with preparation of the Abstract Booklet and enormous work with preparing of the Conference Proceedings. I am very grateful also to Mr. Ondrej Milkovič, who prepared conference web site.

The scientific success of this conference was first of all a result of the quality and the scientific motivation of its participants. Therefore, in the name of the Conference Organizing Committee METALLOGRAPHY 2013 I would like to thank all participants for their presence and for their contributing to a special friendly atmosphere during Conference, generated not only by the topics to be discussed but also by the marvels of nature surrounding us in the High Tatra Mountains.

Margita Longauerová
Chair of the Symposium

The Conference is organized by

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Acknowledgement

A big vote of thanks must go to our principal sponsor, U. S. Steel Košice, s.r.o. and also SMZ - Slovak Magnesite Works, Jelšava. The list of companies taking part in the exhibition, and which also sponsor this symposium, is as follows: TSI System s.r.o., STRUERS GmbH - Organization Division , MITAR s.r.o., Carl ZEISS SLOVAKIA s.r.o., NIKON spol. s.r.o., ZENA – R Slovakia s.r.o., JEOL (Europe) SAS – Organization Division, Edlin s.r.o., METROTEST s.r.o. The Conference Committee also wishes to acknowledge the assistance and encouragement that we have received from many other individuals and organizations in the preparation of this event.

