

## Preface

In 2000, in the historical city of Reims, Prof. Alain Lodini created and organized the first Meca-SENS conference for “Mechanical Stress Evaluation by Neutrons and Synchrotron Radiation”. The idea originated from periodic meetings he organized with the Laboratoire Léon Brillouin and the University of Reims, bringing together academics and industrials. At this time it was hoped that this was the start of a series of conferences to follow. And it was! 15 years later we hosted the 8<sup>th</sup> MECA-SENS conference again in France, in the city of science and technology: Grenoble.

The dialogue between academics, large scale facilities and industry is the driving force for the development of new materials and characterization techniques of mechanical properties of structural materials. One requires the other. The uniqueness of neutron and x-ray stress determination is their applicability to both, fundamental research and industrial applications. That is why the dialogue with industry is so important.

All over the world at large facilities, dedicated instruments for non-destructive stress determination have been built over the past two decades. And their development continues. Faster instruments allow more and more in-situ experiments, imaging techniques are maturing, multiscale analysis, extracting stress and microstructural information at the same time and strong improvements of lateral resolution are today's trends.

The contributions to Meca-SENS give an overview of the state-of-the-art developments of non-destructive characterization techniques and their application in fundamental and applied research.

We would like to thank the hosting institutions ESRF and ILL and our sponsors for the financial support of the conference. Minatec for providing the conference venue and Didier Molko for his technical support not only during the conference but especially for his assistance and his valuable advices during the preparation phase. We would like to heartily thank all the people who have participated to the reviewing of the contributed papers and in particular Dr. Tom Holden and Prof. Tamás Ungár. Our special thanks go to the staff of ESRF and ILL and to Fabienne Mengoni and Brigitte Dubouloz whose outstanding commitment made the course of the conference a success.

We hope the reader will find useful information about the latest developments in the field of neutron and synchrotron radiation stress determination and are looking forward to Meca-SENS IX in South-Africa,

Thomas Buslaps

Thilo Pirling

*On behalf of the organizing committee*

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**This event was supported by:**



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