

PREFACE

Dear colleagues,

On this www site, you can find **Proceedings of the 8th European Symposium on Martensitic Transformations (ESOMAT 2009)** held in Prague, Czech Republic, September 7-11, 2009. The proceedings were published as online edition by [EDP Sciences](#). They contain 150 research papers presented at the Esomat 2009 conference and 10 articles from the ESF EUROCORES S3T [special SMA modelling session](#) organized during the conference.

Esomat conferences are main European scientific events in the field of martensitic transformations in solids and more particularly in shape memory materials and steels. They have been held on a three-year cycle since 1989. Previous conferences were hosted in Bochum in Germany, Aussois in France, Barcelona in Spain, Enschede in The Netherlands, Como in Italy, Cirencester in England and Bochum in Germany again. There has been remarkable developments in the field of martensitic transformations during the last two decades, the most significant one is probably the drift from basic material research and physics towards multidisplinary field of modern functional materials involving also mathematics, mechanics, design and development of engineering applications. Interdisciplinary interactions among specialists with various professional backgrounds currently dominate the Esomat community.

[ESOMAT 2009](#) conference was held in Prague, Czech Republic on September 7-11, 2009.

The conference has been comparable in size to the previous very successful Esomat 2006 conference in Bochum, Germany. There were 290 research works presented in Prague in a form of keynote lectures, invited lectures oral, poster presentation, and Roundrobin SMA modeling talks. In total, there were 282 participants from 31 countries attending the conference. According to [conference statistics](#), the number of attendees from individual countries was: Argentina 3, Australia 2, Austria 5, Belgium 7, Canada 2, China 5, Czech Republic 28, Finland 5, France 32, Germany 59, Hungary 3, India 1, Iran 1, Izrael 2, Italy 10, Japan 15, Korea 8, Mexico 1, Netherlands 2, Poland 7, Portugal 6, Romania 2, Russian Federation 28, Slovakia 1, Slovenia 1, Spain 22, Switzerland 1, Turkey 2, Ukraine 3, United Kingdom 6, United States 12. The conference was organized by the [Institute of Physics](#) of the ASCR jointly with the Institute of Physics of Materials of the ASCR, the Institute of Thermomechanics of the ASCR, the Brno University of Technology and the Czech Technical University. The conference was held in two separate locations in the centre of Prague. All 9 [keynote lecturers](#) gave excellent talks on Monday September 7 in the Bethlehem Chapel in Stare Mesto. The organizers would like to express special thanks to them for providing wonderful scientific start of the conference and for matching with the unusual atmosphere of the [Bethlehem Chapel](#). The regular program continued in two parallel sessions and two poster sessions from Tuesday September 8 till Friday September 11 in the Malostransky Palace on Mala Strana. Most of the participants stayed in small hotels near the venue and the late summer weather was beautiful in early September. There was enough time to enjoy the rich scientific [conference program](#), have fruitful scientific discussions with colleagues and still enjoy extra time in narrow streets and pubs of the old Prague. The [social program](#) included mainly a classic music concert organized jointly by Esomat 2009 and the Senate of the

Parliament of the Czech Republic on Wednesday, September 9 in the Wallenstein garden and the conference banquet in hotel Praha on Thursday evening, September 10.

The [special SMA modelling session](#) was organized as a special networking event during the ESOMAT 2009. A [ESF S3T EUROCORES](#) sponsored initiative called **Roundrobin SMA modeling** was finally evaluated on this session. Roundrobin SMA modeling is a collaboration activity of European research teams aimed at mutual assessment of various models of thermomechanical behaviors of shape memory alloys, particularly to the comparison of their mathematical structure, performance and capability to capture stress-strain-temperature SMA responses. We would like to thank the ESF for sponsoring this event. A meeting of ESF S3T EUROCORES committee was held in Malostransky Palace on Wednesday September 10 2009.

The [Local organizing committee](#) of Esomat 2009 had chosen to publish the **conference proceedings as open access online proceedings** with EDP Sciences. An [Esomat community webpage](#) was created by EDP Sciences publisher for this purpose. Thanks to enormous effort of the authors of the articles, members of the Esomat 2009 LOC and EDP Sciences staff, the conference participants could read the articles in the Esomat 2009 proceedings already during the conference days. Papers published at all previous 8 Esomat conferences can be [downloaded](#) from the Esomat community webpage.

Regarding the conference organization, **special thanks** belong to Ms. Anna Kotesovcova (conference agency [CONFORG](#)), Ludek Heller for putting up and running [conference www page](#) and preparation of the conference [program book](#), Hanus Seiner for supervising the preparation of the conference program, Petr Sedlak for organizing the Special S3T modeling session and publications, conference secretary Marcela Bohackova and all members of LOC for editing the conference proceedings. Mainly, however, we would like to thank all conference delegates and accompanying persons who came to attend the ESOMAT 2009 in Prague and made it a scientifically and socially joyful event.

The ESOMAT [International Advisory Committee](#) on its meeting on September 8, 2009 has evaluated and approved the proposal for next **Esomat 2012 conference** to be organized by the Russian teams from the Moscow Institute of Steel and Alloys (Prof. S.D. Prokoshkin) and the Saint-Petersburg State University (Prof A.E. Volkov, Dr. N. Resnina) **on September 2-7, 2012 in Sankt Peterburg, Russia**. Prof. S.D. Prokoshkin as a chairman of the Esomat 2012 was elected as a new member and chairman of the Esomat IAC.



Petr Šittner
Chairman of the ESOMAT '09

Antonin Dlouhy and Jaroslav Pokluda
Co-chairmen of Esomat 2009