

This volume contains articles of the invited speakers at the IUPAC-sponsored International Symposium on “Radical Polymerization: Kinetics and Mechanism” held in Il Ciocco (Italia) during the week September 3–8, 2006. The conference was attended by close to 200 people from all over the world with a good balance between attendees from industry and academia. About 40 per cent of the attendees were Ph.D. students, who very actively participated in the scientific program.

This symposium was the fourth within the series of so-called SML conferences, which are the major scientific forum for addressing kinetic and mechanistic aspects of free-radical polymerization and of controlled radical polymerization. The first SML meeting was organized by Ken O'Driscoll and Saverio Russo at Santa Margherita Ligure (Italy) in May 1987. The second SML meeting was held at the same location by the same organizers in 1996. The third SML meeting was organized in 2001 by Michael Buback from Göttingen University and by Ton German from the Technical University of Eindhoven. They selected the conference hotel at Il Ciocco as the new symposium site. This venue is located in the beautiful province of Lucca. Thus, the abbreviation SML, which originally referred to Santa Margherita Ligure, now stands for Scientific Meeting Lucca.

The fourth SML meeting (September 3–8, 2006) was organized by Michael Buback and by Alex van Herk from the Technical University of Eindhoven. As has been foreseen in the last meeting, the number of contributions on controlled radical polymerization (CRP) has significantly increased. Four out of the eight sessions were devoted to CRP and the organizers consequently decided to remove the word ‘Free’ from the conference heading. The symposium nevertheless remains the number one forum where kinetic and mechanistic issues are addressed in detail and depth for the entire field of radical polymerization. Several important aspects of radical polymerization have first been presented at SML con-

ferences, e.g., the groundbreaking pulsed-laser polymerization – size-exclusion chromatography method for the reliable measurement of propagation rate coefficients, which has been introduced by Professor O. F. Olaj and his group at SML I.

Distinctive features of the conference are that all attendees stay in the same hotel, that no parallel sessions are presented and that the posters may be discussed throughout the entire week. A total of 35 invited lectures have been given, eight of which were selected from the submitted poster abstracts. Moreover, 114 posters were presented, mostly by research students. Most of the invited lectures are reflected as written contributions in this issue of *Macromolecular Symposia*. In addition, the six groups of authors, who received most of the votes during the election of the poster prize winners, were also invited to contribute to this volume. It should be noted that all conference attendees could participate in the voting procedure for the poster prizes.

The symposium comprised five major themes:

- Fundamentals of free-radical polymerization
- Heterogeneous polymerization
- Controlled radical polymerization
- Polymer reaction engineering
- Polymer characterization

We are pleased to see that SML IV again marked an important step forward toward the better understanding of the kinetics and mechanism of radical polymerization, which is extremely relevant for both conventional and controlled radical polymerization and for people in academia as well as in industry.

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