

PREFACE

The Tenth International Conference on Silicon Carbide and Related Materials (ICSCRM 2003) was held in Lyon, France, from October 5 to 10, 2003. With a total number of 550 participants coming from Universities (70%) and Industry (30%) this meeting was as large as the last one (ICSCRM 2001) held in Tsukuba, Japan. A total number of 19 different countries were represented with 107 delegates from Japan and 102 from the USA. The remaining participants were mainly from Europe (300) (90 coming from France, 60 from Germany, 38 from Sweden, 27 from Italy, 15 from UK and 10 from Spain). The remaining countries included Russia, the Republic of Korea, Australia and South Africa.

In these proceedings, written versions of 364 contributed papers and 26 invited talks, presented as milestones, are included. They give an overview of the state of the art in a specific field at the time of the conference. To keep within a two-volume edition which is now part of a well-established tradition since the seventh edition of this conference in Stockholm, the number of accepted papers had to be strictly limited.

These proceedings record the understanding of the fundamental topics which sustain the development of a competitive SiC technology. The growth of large defect-free substrates with a well-controlled doping level, the development of efficient selective area doping processes and, for MOS applications, the optimisation of the SiC/SiO₂ interface continue to be important focuses. Once this will be achieved, the development of electronic devices operating under extreme conditions with outstanding properties will be a mature field.

A recent breakthrough is the use of high quality 3-inch PVT substrates for Schottky diodes manufacturing. In this way, for 600V-10A devices, a manufacturing yield of ~97% could be achieved. Such large diameter substrates are no longer an exclusivity from the USA. The use of HT-CVD developed in Sweden, PVT in Japan and CF-PVT in France enable to grow high quality material. This is a key point to develop SiC electronic devices applications.

The growth of high quality epitaxial layers is probably one of the more mature technique in today SiC technology. Large capability reactors are commercially available and various polytypes can be grown with various surface orientations and a low level of residual doping. Defects, like stacking faults, still exist but will be soon under control since the mechanisms of formation are better and better understood.

Processing, in many cases, remains a problem. This includes localised area doping, specially at high dose when using aluminium and phosphorous, and oxide formation. In both cases, new strategies have been developed, using non-standard crystal orientations.

We close this preface by thanking the many individuals and organizations that supported the conference.

Its success has been made possible by many people behind the scene. First of all, the members of the Program and International Steering Committees organized a strong technical program with two parallel sessions and four poster sessions. All Session Chairmen made sure that the meeting was running smoothly and in time. Last but not least, in order to maintain a high standard of publication while still insuring a quick delivery of reports, many reviewers carefully collected and punctually reported on the manuscripts during the conference time. We thank them very much.

This conference would not have been successful without the expert work of Package Organization and the strong involvement of the Local Organizing Committee. Among them, a very warm thank is due to Pierre Pinard and Patricia Combiar from Lyon and Michel Pons, Francis Baillet and Jean-Pierre Joly from Grenoble. They diligently took care of many details of the organisational matters, from the abstract submission, web page, technical program to many other things including an unforgettable Conference Banquet. We are grateful to Magali Ucar and Fabienne Fonseca for their assistance in preparing this book.

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Let's give best wishes to Ms Laura Rea who will be the chairperson of the next International ICSCRM'05 Conference which will take place in Pittsburgh, USA.

Roland Madar
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