

## PREFACE

This proceedings volume contains 127 contributions presented at the ninth International Autumn Meeting on Gettering and Defect Engineering in Semiconductor Technology (GADEST) held from September 30 to October 3, 2001 in Catania, Italy. Aim of this bi-annual meeting, held since 1985, is to provide a forum for interaction among scientists and engineers engaged in semiconductor defects physics and materials science, with a particular emphasis towards device applications. Indeed, fundamental aspects as well as technological problems associated with defects in electronic materials and devices are addressed. The contributed papers were selected from more than 160 submitted extended abstracts from over 100 research Institutes in 23 countries. The 12 invited papers, presented by internationally recognised experts in the field, review the state of the art and future trends in their respective research fields. Some of them are focussed on emerging methods or techniques.

The topics of this conference were selected on the assumption that single crystal Si and Si-based semiconductors will dominate microelectronics until far in the 21st century. The main reason for such a success of silicon technology is based on economical reasons. The production cost per area increases by a factor of 5 or even 10 when going from 200 mm Si wafers to compound semiconductors or other materials substrates. With the integration of heterostructures into the established silicon technology – a promising approach is the SiGe(C) system – frequencies become attainable which used to be the exclusive domain of compound semiconductors. Furthermore, the continuous efforts in research on Si based materials has been able to overcome some of the most stringent limits of a technology based on silicon. In fact, the demonstration of the integration of IV-IV heterostructures and of light emitting devices in silicon technology together with the expected 450 mm wafers combined with the 70 nm technology seems to maintain the performance advantages that make more than 95% of all manufactured semiconductor devices fabricated in silicon.

However, the demands of wider applications for solids state electronics is increasing enlarging the request for devices with higher performances and with peculiar properties. This makes the research on advanced materials and devices based on other semiconductors a relevant aspect of the semiconductor research for the next future.

This proceedings book spans a large variety of topics going from silicon crystal growth and substrates, to technological procedures and analytical techniques, to dopant-defect interactions, gettering, Si optoelectronics, radiation hardness and nanoelectronics. A small part of the book, however, is also dedicated to compound semiconductors and materials different than silicon.

The generous support of the many industrial and governmental sponsors enabled the organisers to provide funding for participants from Eastern European countries and to keep the conference fee at an affordable level. The great help provided by the organising and program committees in setting up the conference is gratefully acknowledged. We would also like to thank all the authors who contributed with their excellent papers to the proceedings. Last, but not least, we are greatly indebted to the persons of the local committee that, with their generous work, significantly contributed to the success of the meeting.

The next edition of the GADEST conference, i.e. its 10<sup>th</sup> edition, will be held in Germany in 2003 in the same place where the first meeting was successfully organised.

Catania, May 2001

Vito Raineri  
Francesco Priolo  
Hans Richter  
Martin Kittler



**9<sup>th</sup> INTERNATIONAL AUTUMN MEETING  
GETTERING AND DEFECT ENGINEERING IN  
SEMICONDUCTOR TECHNOLOGY – GADEST 2001**

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