

PREFACE

The Eurotherm Committee was created in 1986 by members of the European Community to promote the European co-operation in the Thermal Sciences by gathering thermal scientists and engineers working in specialised areas. The series of Eurotherm Seminars established by the Committee has become a popular forum for scientific and technical exchange of ideas on a wide range of special topics.

The continuous evolution of techniques, devices, and fields of applications is a permanent challenge for researchers and engineers working in the domain of quantitative infrared thermography. To make this development more transparent, the seminar No. 27 was arranged both to focus on recent developments as well as to provide an opportunity for a strong interchange between all specialists and potential users coming from various fields of applications. This first seminar named **QIRT 92** was held in Chatenay-Malabry, in the Ecole Centrale de Paris on 7-9 July 1992 and chaired by Daniel Balageas.

During the course of the conference, the necessity of permanent information and co-ordination on the subject arose. It was therefore decided to establish a QIRT Working Group (QIRT-WG) whose main responsibility is the organisation of a QIRT European Conference every two years. The second conference **QIRT 94** (Eurotherm-Seminar No. 42) chaired by Giovanni Carlomagno was held in Sorrento (Italy). The conference was preceded by three short Pre-Seminar Courses: Basic thermography, Applications to fluids, Applications to solids.

This book deals with selected papers of the third conference on quantitative infrared thermography, **QIRT 96**, which was held in Stuttgart (Germany), chaired by Gerd Busse and organised by the group for nondestructive testing of the Institute for Polymer Testing and Polymer Science (IKP) at the University of Stuttgart. This conference and the preceding tutorials attracted 120 participants from 19 countries. A total of 90 papers was submitted from which 80 were selected by the QIRT Working Group members for presentation. In a reviewing process 65 papers were selected for this proceedings book based on their quality and relevance to the conference topics. They are presented herein to the thermographers' community also as a proof of the strength and versatility of quantitative infrared thermography techniques. The papers are organised in sections that correspond to the structure of the conference.

The editors are grateful to the QIRT-WG members^{*)} who assisted them, especially as Scientific Committee, to all colleagues who presented the invited lectures, the oral presentations and posters, to those of them who accepted to chair the conference sessions, and last but not least to the local team of the division for nondestructive testing whose perfect organisation work helped to make this conference a success. The editors acknowledge the unforeseen amount of careful work that had to be performed by Mrs. Marlis Wakefield in order to give this book a somewhat homogeneous appearance.

Unlike the previous conferences this one suffered from the lack of public funding as a consequence of financial problems emerging in many countries. However, it is a great pleasure to acknowledge the helpful support provided by

- *the German Society for Nondestructive Testing (DGZfP)*
- *the International Science Foundation, New York (USA)*
- *the Department of Energetics, Thermo-fluid-dynamics and Environmental Control (DETEC) of Università di Napoli „Federico II“ (Italy)*
- *Agema Infrared Systems GmbH, Siemensstr. 20, D- 64289 Darmstadt*
- *Polytec GmbH, Polytec Platz 1-7, D-76337 Waldbronn.*

The same lack of money prevented financial support by public institutions to East European participants. The conference organisers encouraged companies to display their recent products in an exhibition. The fees from this exhibition made the attendance of many East European participants possible. It is a pleasure to acknowledge these companies for their indirect support which helped the organizers to bring together scientists and engineers working in quantitative infrared thermography.

G. Busse, D. Balageas, and G.M. Carlomagno.

***) The present composition of QIRT-WG is the following:**
Darryl Almond, United-Kingdom; Daniel Balageas, France; Jean-Marie Buchlin, Belgium; Gerd Busse (Chairman), Germany; Giovanni Maria Carlomagno, Italy; Xavier Maldague, Canada; Piotr Pregowski, Poland; Jukka Rantala, Finland; Srecko Svaic, Croatia; Vladimir Vavilov, Russia.