

## Preface

Materials, as utilized, experience the effect of residual, internal stresses, as these are the outcome of the material synthesis and/or engineering, and/or application in practice. Understanding and control of residual stresses is a prerequisite for successful application of materials in wide ranging areas as corresponding to, e.g., the microelectronic industry (thin films) and the automotive industry (crankshafts).

The ECRS conference series is the platform to present developments in experimental techniques for residual stress measurement, in modelling and numerical prediction of residual stresses, and in the investigation of the effects of residual stresses on material properties, in particular in practical applications.

The Fifth European Conference on Residual Stresses ECRS5, held at Noordwijkerhout, The Netherlands, from 28 - 30 September 1999, was a fruitful continuation in the ECRS conference series.



About half of the papers in this book of the ECRS5 Proceedings cover general aspects related to the methodology of experimental determination and calculation of residual stresses, whereas the other part addresses specific topics related to Surface Engineering, Fatigue, Stress in Products, and Composites.

At the conference a special evening session has been devoted to the introduction of a standard for stress measurement by means of X-ray diffraction.

Twenty four countries, including five from outside Europe, were represented at the conference by 162 engineers and scientists: a more detailed account is given below. The larger part of the participants belonged to universities, 18 % to industries and the remaining 25 % were connected

with independent research institutions, and research institutes as for example nuclear reactors, and synchrotron facilities.

Number of participants from:

36	Germany
29	France
26	Netherlands
13	United Kingdom
7	Italy
7	Sweden
6	Russia
6	U. S. A.
5	Belgium
4	Czech Republic
4	Japan
4	Portugal
2	Austria
2	Finland
2	South Africa

and 1 participant from each of the countries:

Canada    Estonia    Ireland    Israel    Norway    Slovenia    Spain    Switzerland

The members of the organising committee express their gratitude to the conference secretariat, the invited speakers, the chairpersons, the technical assistants and the sponsors for their contributions to a successful ECRS5.

As the Editors of this book of the ECRS5 Proceedings, we hope that these Proceedings will be an accurate reflection of the ECRS5 conference and a valuable source of information for the ECRS5 participants as well as for other interested readers.

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