OPTIMIZATION USING EXERGY-BASED METHODS AND COMPUTATIONAL FLUID DYNAMICS

Editors:
George Tsatsaronis
Alicia Boyano

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Prof. Dr.–Ing. George Tsatsaronis; Dr. Alicia Boyano
Technische Universität Berlin
Institut für Energietechnik
Marchstrasse 18, 10587 Berlin, Germany
tsatsaronis@iet.tu-berlin.de
a.boyano@iet.tu-berlin.de

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The cover of this textbook has been designed by Dr. Alicia Boyano, TU Berlin.

FOREWORD

The cost-effective and environmentally responsible supply and use of energy will become increasingly important in the coming years. Future developments will have to focus more on reducing the per capita use of fossil fuels, building cleaner energy conversion plants, and increasing the cost effectiveness of environmentally friendly technologies. Exergy-based methods and computational fluid dynamics are important tools in assisting these developments.

The purpose of this conference was to provide a forum for presenting and discussing major results obtained (a) at the Marie Curie Program INSPIRE supported by the European Union, (b) in various projects supported by the US Air Force, and (c) during other research activities in the area of improving the design and operation of various systems using exergy – based methods and computational fluid dynamics. The conference papers cover a relatively wide range of topics dealing with the improvement of energy conversion processes, flight systems, and of energy use. Applications include power plants, combustion systems, flight systems, and chemically reacting systems.

We would like to thank very much all persons and organizations who have contributed to this conference: The authors, the sponsors, the support staff, the other members of the organizing committee, and the Technische Universität Berlin.

George Tsatsaronis
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With publishing "Optimization Using Exergy-based Methods and Computational Fluid Dynamics" – the twelfth book in this series was released. At least one further book concerning "Advanced Heat Transfer" is expected to be published in 2010.

Already published:
(the latest editions are listed only)

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6. Dierkes, P. v.; Bruch, G.: Abfall und Chemie, Teil III, Papierflieger-Verlag, Clausthal-Zellerfeld 2009, ISBN 978–3–89720–566–6.
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11. Nowak, A. J. (Editor): Numerical Methody in Heat Transfer, Papierflieger-Verlag, Clausthal-Zellerfeld 2009, ISBN 978–3–86948–049–7.

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