

Dr. Uwe Stute is head of the new department. He has returned to the LZH after three years in industrial as a branch manager for photovoltaics. Before he started working for the firm Trumpf Laser, he was head of the Department of Production and System Technology at the LZH, from 2004 to 2008. He is excited about his return to the Hannoverian research center. "I think it is extremely interesting", he says, "to be able to work on laser processes in areas which are presently undergoing major developments. Laser technology has an enormous potential in this field."

Stute, who has a doctor's degree in physics, states that the most important current research goals of his department are to optimize glass-metal/glass-glass welding for the production of solar collectors, open new production possibilities in the field of photovoltaics using "cold" laser processing, and automating laser tooling of composite materials.

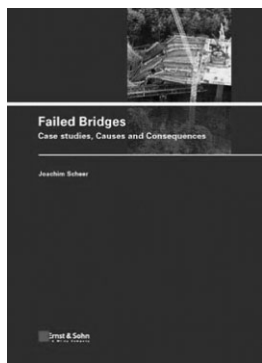
For more information, please contact: Laser Zentrum Hannover e.V., Michael Botts, Hollerithallee 8, D-30419 Hannover, Germany, Tel.: +49 511 2788-151, Fax: +49 511 2788-100, m.botts@lzh.de, www.lzh.de

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## Books

### Failed Bridges, Case studies, Causes and Consequences,

Joachim Scheer, Wilhelm Ernst & Sohn, A Wiley Company, 2010, 321 pages. 170 figures, 79 €, ISBN: 978-3-433-029510



10 years after the first edition of Professor Scheer's book "Bridges", being part of the series *Failure of structures*, was

published in the end of 2000, the English translation is available now, in 2010. The title is "Failed Bridges, Case studies, Causes and Consequences". The author, Univ. Professor emeritus Dr.-Ing. Joachim Scheer, has been teaching "Steel Construction" at the Technical University of Braunschweig, Germany for more than 30 years and he is simply an excellent specialist for the analysis of structural failure. In his foreword, Professor Christian Menn, former professor from the Swiss Federal Institute of Technology (ETH Zürich), Switzerland, famous in bridge engineering himself, acknowledges the impressive and extremely valuable overview on serious accidents involving structures presented in the new English edition. He recommends the book to both, practising engineers and students.

A comprehensive unrivalled collection of 536 failure cases is analysed regarding their occurrence in the service life of the bridge, beginning with the design stage and according to their causes of failure. Professor Scheer's intention is to keep previous failure cases in engineer's mind and learn the lessons from thorough and sound analysis of the damage processes and causes. Finally, a catalogue of recommendations helps the designing engineers to prevent already known mistakes in advance during design, planning and during construction.

The book is divided in 17 chapters. Beginning with an Introduction (chapter 1), General information about failure of bridges (chapter 2) the author follows the logical chain of main failure types beginning with failure during construction (chapter 3), failure in service without external action (chapter 4), man made failure (chapters 5, 6, 7, 11) and failure due to extreme events (chapters 8, 9, 10). Probably the most valuable chapters of the book are the chapters 12 and 13 describing lessons learnt for the practice and lessons learnt for teaching. Chapters 13-17 contain further editorial details as e.g. literature and geographical index.

Numerous collapses that occurred due to similar reasons during construction are compared in chapter 3. For example, the author describes and compares the collapses of the large steel box girder bridges, most were collapsed during erection with the cantilever method.

Although the German edition is well known not only to the German bridge engineers, it is highly recommended to obtain the book. The book covers an enormous amount of detailed information about the failure analysis of bridge collapses as well as knowledge collected during a distinguished professional life in teaching, consultancy and research. The English edition is furthermore completed by failures of bridges that occurred during the last decade. A completely new chapter is added: "Failure due to seismic activity".

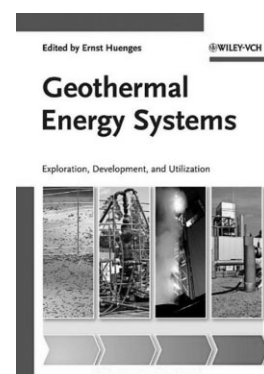
It can be concluded by the author's foreword. Professor Scheer emphasized that no collapse of a bridge in the book occurred because of inaccurate structural safety analysis. But he suspects that nowadays the construction schedule seems to be more important than the safety regulations. Finally, he cited the remarkable warning of the American philosopher and poet George Santayana in "The Life of Reason", published in 1906: "Those who cannot remember the past are condemned to repeat it."

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R. Helmerich

### Geothermal Energy Systems - Exploration, Development, and Utilization,

edited by E. Huenges, 464 pages, 202 figures, Wiley-VCH Weinheim, 2010, € 99, ISBN: 978-3-527-40831-3



Geothermal Energy becomes more and more important as a resource for basic power supply not only in countries like Iceland or New Zealand, where a quite easy access is available, but also in Central Europe and North and Middle America.