Preface

The sixth English edition of “Explosives” which is now available can look back over a history of 30 years since it was first published.

On the initiative of its main author Dr. Rudolf Meyer (who regrettably died in 2000), the first copy of the German version of “Explosivstoffe”, which had become known far beyond the borders of German-speaking countries, was first translated in 1977. It was also Dr. Rudolf Meyer, who in 1961, in his function of Technical Director of the German company WASAG Chemie AG, gave new impetus to the company brochure to achieve its present form.

The preparation of all the current German and English editions have a closely-knit history with the Fraunhofer Institut für chemische Technologie (ICT, formerly the Institut für Chemie der Treib- und Explosivstoffe with its head offices in Pfinztal/Berghausen near Karlsruhe, Germany. This institute was initially founded by Dr. Karl Meyer, Dr. Rudolf Meyer’s elder brother in 1957, as part of the Technische Hochschule, Karlsruhe, and was extended later on.

We regret to say that while this sixth edition was under preparation, the Assistant Technical Director of ICT, Dr. Fred Volk, (1930–2005) passed away.
Immediately after obtaining his doctorate in chemistry in 1960, Dr. Fred Volk joined the ICT, which had then just been built in Pfinztal, where he worked closely with Dr. Karl Meyer. The main focus of his research within the area of explosive analysis was on the use of thin-layer chromatography and mass spectrometry as well as on calculating thermodynamic energies used in explosive and combustion processes. The many key words and the related articles in “Explosives” dealing with theoretical and thermodynamic performances were painstakingly checked, or written by Dr. F. Volk himself, each time before a new edition was printed.

As an addition to the previous edition of “Explosives”, this book includes even more information on new explosive formulations.
Dr. Alfred Kappl has provided information and text materials on Fuel Air and Thermobaric explosives, and Dr. Robert Bickes (Sandia National Labs, USA) has contributed an article about Semiconductor Bridge Igniters (SCB). The special department II.3 (Dr. Thomas Lehmann, Dr. Silke Schwarz and Dr. Dietrich Eckhardt) of the Deutsche Bundesanstalt für Materialforschung und -prüfung (German Federal Institute for Material Testing and Research, BAM) has also contributed important notes and references on the subjects of hazardous substances and testing procedures.
Prof. Dr. Charles L. Mader has provided relevant information on the subject area of detonation physics. The Fraunhofer ICT has once again provided valuable help towards the publication of this volume,

and Prof. Dr. P. Elsner, Dr. S. Kelzenberg, Dr. Th. Keicher, Dr. N. Eisenreich, Dr. K. Menke, Dr. H. Krause, Dr. M. Hermann, and Dr. P. B. Kempa deserve particular mention for their generous contributions. The authors would particularly like to thank their colleagues mentioned above for their contributions and for providing valuable comments.

Due to reductions and restructuring in the explosives industry, which has sometimes resulted in a complete loss of former product and company names used over decades, a range of names used in the past has not been included in this edition.

As an addition a CD containing a demo version of the ICT-Database of Thermochemical Values and information about the ICT-Thermodynamic-Code ist attached to the book. The full version of the database contains detailed information of more than 14,000 substances, including structure formulae, oxygen balance, densities and enthalpies of formation. The Code may be used for calculating properties of formulations like the heat of explosion or specific impulse of explosives, propellants or pyrotechnics. Both programs, updated regularly, are available by the Fraunhofer ICT.

Among these may be mentioned Dr. B. Eulering (WASAG Chemie, Essen), Dipl.-Ing. W. Franke (BAM, Berlin), Dipl.-Ing. H. Grosse † (WASAG Chemie), Dr. E. Häusler † (BICT), Dr. R. Hagel (Ruag Ammotec, Fürth), Dr. H. Hornberg † (ICT), Dr. H. Krebs (BAM, Berlin), Dr. G. Kistner (ICT), Prof. Dr H. Köhler † (Austron), Dr. A. Kratsch (Rheinmetall Industrie GmbH), Dip.-Ing. H. Krätschmer, Dr. K. Meyer † (ICT), Prof. Dr.-Ing. K. Nixdorff (BW University, Hamburg), Dr. K. Redecker, Dr. H. J. Rodner (BAM, Berlin), Dr. J. F. Roth † (DNAG, Troisdorf), Prof. Dr. H. Schubert (ICT), Prof. Dr. M. Steidinger (BAM, Berlin), Dipl.-Ing. G. Stockmann (WNC-Nitrochemie), Dr. G. Traxler (ORS Wien), Mr. R. Varosh (RISI, USA), Mr. J. Wraige (Solar Pyrotechnics, GB), Mrs. Christine Westermaier and Dr. R. Zimmermann (BVS, Dortmund).

We hope that the large number of people who remain unmentioned will also feel that they share in this expression of thanks.

The authors also wish to thank the publishers, the WILEY-VCH Verlag GmbH Company, and in particular Mrs. K. Sora, Mrs. R. Dötzer and Mrs. D. Kleemann, for the most pleasant co-operation in the production and printing of this book.

The publishers and authors continue to welcome suggestions and communications of any kind. We hope that our book will remain an important reference work and a quick source of information in this edition as well.

Schardenberg, April 2007 Josef Köhler Axel Homburg