Energetic Materials – Structure and Properties

53rd International Annual Conference of the Fraunhofer ICT

June 25-28, 2024
Convention Center, Gartenhalle
Karlsruhe, Germany
International Annual Conferences of the Fraunhofer ICT, with a different emphasis each year, cover scientific and technological progress in the entire field of energetic materials and the related disciplines. Held annually for over 50 years, the conferences have gained worldwide importance, with hundreds of participants from more than 30 nations each year.

Energetic Materials – Structure and Properties

In recent decades, more demanding and varied requirements for the properties of energetic materials have led to extensive research activities to improve performance and IM behavior. In addition, the survivability of energetic materials under harsh conditions, for applications with high mechanical or thermal loads, is increasingly becoming the focus of research and development. This relies on a growing understanding of the structural details that determine material properties. While the molecular structure gives a first impression of the functionality and performance of a new energetic material, the structure at the micro- and meso-level determines or modulates essential features such as sensitivity, compatibility and mechanical stability. Examples of advanced structural models include cocrystals, core-shell, multilayer or functionally graded explosives and additively manufactured multicomponent propellants. Structural properties thus accompany all steps in the development of energetic materials, from initial synthesis, formulation and product design through to testing and evaluation.

The International Annual Conference of the Fraunhofer ICT serves as a forum to discuss the current state of the art, to present new methods, ideas and research results and to further improve scientific understanding in the field of energetic materials. Join our conference to benefit from a platform for lively discussions, detailed exchange of scientific results and – most importantly – for networking with international experts.

Chairman of the Conference
Dr. Michael Herrmann
Fraunhofer ICT, Pfinztal, Germany
Energetic Materials – Structure and Properties

Main topics
– New energetic materials and structures
– Synthesis and processing
– Characterization and testing
– Modelling and Simulation
– International cooperations and programs

Presentation
Contributions to the conference can take the form of oral presentations (presentation time 20 minutes including discussion) or posters. Please submit an extended abstract not exceeding 500 words with optional figures and tables together with the exact title and name of the author(s). The papers will be published in the Conference Proceedings which will be available at the beginning of the event. Guidelines on how to prepare the text for publication will be sent to the authors.

Conference language
English

Deadlines
Abstracts (to manuela.wolff@ict.fraunhofer.de) Dec. 18, 2023
Reply to authors March 2024
Full papers April 2024
The program will be published in April 2024.
The Fraunhofer Institute for Chemical Technology ICT

The Fraunhofer ICT with its 500 employees is the only German research institution working on the entire development chain, ranging from raw energetic material synthesis through to the development and evaluation of energetic prototype systems. The research is focused on the synthesis, development, characterization, simulation, modeling, formulation and manufacturing of rocket propellants, gun propellants, explosives, gas generators and pyrotechnics.

Fraunhofer ICT helps to ensure the strong analysis and decision-making capabilities of the German Federal Ministry of Defence (BMVg), and supports industrial R&D activities in Germany and Europe. The key to successful research and the development of improved energetic materials and systems is the long-standing competence of the institute’s employees.

Today, Fraunhofer ICT carries out R&D on the performance, insensitivity, functionality, safety and environmental compatibility of new, tailor-made propellant and explosive systems.

Conference Management

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