Angewandte International Edition Chemie

Thomas M. Klapötke

Date of birth: February 24, 1961
Position: Professor of Inorganic Chemistry, Ludwig-Maximilians-Universität, Munich (Germany)
Education: 1984 Diploma, Technische Universität Berlin (Germany)
1986 PhD with Harmut Köpf, Technische Universität Berlin
1987–1988 Postdoctoral fellow with Jack Passmore, Fredericton (Canada)
Awards: **1987** Schering Prize; **1987** Feodor Lynen Scholarship of the Alexander von Humboldt Foundation; **1994** Winnacker Award (Hoechst AG); **1994** Heinz Maier-Leibnitz Prize (German government); **1995** Heisenberg Scholarship of the DFG; **1996** Steinhofer Prize (GDCh and BASF)
Current research interests: Chemistry of highly energetic materials (HEDM), high explosives (HE), RDX replacements, primary explosives, lead-free primaries, solid propellants, high oxidizers (HEDO), perchlorate-free oxidizers, laser ignition, hypergolic reactions, agent defeat explosives, fluorine chemistry, azide chemistry, nitro chemistry, nitramines, energetic polymers, chemistry of hydrazine, tetrazole chemistry, computational chemistry, experimental determination and theoretical prediction of sensitivities (impact, friction, ESD), experimental measurement and theoretical calculations of detonation parameters (velocity of detonation, detonation pressure) heavy-metal-free visible colorants, high-nitrogen illuminants for visible and near-IR radiation, fluorine-containing compounds for countermeasure application, hexachloroethane- and acid-free obscurant smoke formulations

T. M. Klapötke

*The author presented on this page has recently published his **10th article** since 2000 in Angewandte Chemie*: "The Structures of δ-$PdCl_2$ and γ-$PdCl_2$: Phases with Negative Thermal Expansion in One Direction": J. Evers, W. Beck, M. Göbel, S. Jakob, P. Mayer, G. Oehlinger, M. Rotter, T. M. Klapötke, *Angew. Chem.* **2010**, *122*, 5812–5817; *Angew. Chem. Int. Ed.* **2010**, *49*, 5677–5682.

My favorite subject at school was … chemistry.

The most significant advance of the last 100 years has been … rocket propulsion.

The biggest problem that scientists face is … being misunderstood by the public.

Looking back over my career, I … would change nothing.

The most important future applications of my research … are defense oriented.

My work is significant because … it promotes peace.

The worst advice I have ever been given … was to forget about main-group chemistry and to do exclusively organometallic chemistry.

I would have liked to have discovered … the element fluorine.

If I could be a piece of lab equipment, I would be … a distillation collecting flask.

The most groundbreaking discovery in science in the past 100 years has been … quantum mechanics.

My favorite composer is … Gustav Mahler.

If I could be described as an animal … I would be a penguin.

My 5 top papers:

1. "The First Structural Characterization of a Binary P–N Molecule: The Highly Energetic Compound P_3N_{21}": M. Göbel, K. Karaghiosoff, T. M. Klapötke, *Angew. Chem.* **2006**, *118*, 6183–6186; *Angew. Chem. Int. Ed.* **2006**, *45*, 6037–6040. (This communication reports on a new binary P–N molecule).
2. "'Green' Pyrotechnics—a Chemists' Challenge": G. Steinhauser, T. M. Klapötke, *Angew. Chem.* **2008**, *120*, 3376–3394; *Angew. Chem. Int. Ed.* **2008**, 47, 3330–3347. (This review summarizes the problems and challenges related to the chemistry of visible colorants).
3. "Development and Testing of Energetic Materials: The Concept of High Densities Based on the Trinitroethyl Functionality": M. Göbel, T. M. Klapötke, *Adv. Funct. Mater.* **2009**, *19*, 347–365. (The paper reports on BTAT, a new high explosive with the same chemical composition as CL-20).
4. "Chlorotrinitromethane and its exceptional short carbon-chlorine bond": M. Göbel, B. H. Tchitchanov, J. S. Murray, P. Politzer, T. M. Klapötke, *Nature Chem.* **2009**, *1*, 229–235. (The paper analyzes the unique influence of the trinitromethyl group).
5. "Two Outstanding Explosives Based on 1,2-Dinitroguanidine: Ammonium-dinitroguanidine and 1,7-Diamino-1,7-dinitrimino-2,4,6-trinitro-2,4,6-triazaheptane": T. Altenburg, T. M. Klapötke, A. Penger, J. Stierstorfer, *Z. Anorg. Allg. Chem.* **2010**, 636, 463–471. (APX is a new primary explosive, which exceeds the performance of RDX).

T. M. Klapötke has been featured on the cover of Angewandte Chemie: "The First Structural Characterization of a Binary P–N Molecule: The Highly Energetic Compound P_3N_{21}": M. Göbel, K. Karaghiosoff, T. M. Klapötke, *Angew. Chem.* **2006**, *118*, 6183–6186; *Angew. Chem. Int. Ed.* **2006**, *45*, 6037–6040.

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