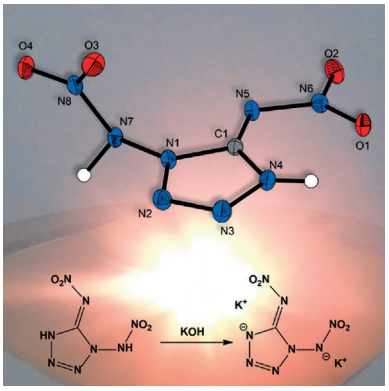
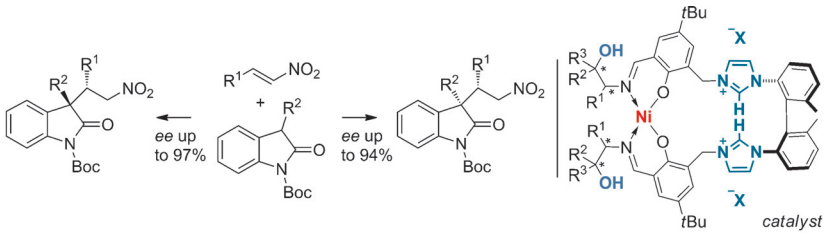
Energetic Materials

N + O = 92.62%: The solid 1,5-di(nitramino)tetrazole consists of 92.62% nitrogen and oxygen and is one of the most powerful chemical explosives to date. Owing to its high sensitivities toward impact and friction, it is hard to tame. The picture shows its molecular structure in front of its thermally induced detonation on a hot copper plate.



Cooperative Catalysis



Overwriting the preference for one diastereomer by means of a catalyst is a challenge and requires precise control over the spatial arrangement of both reacting substrates. A polyfunctional catalyst type has been developed in which a Ni^{II} center, OH groups, and a bisimidazolium participate in the stereocontrol of direct 1,4-additions of oxindoles to nitroolefins. Both product epimers are accessible on demand with high *ee* values. Boc = *tert*-butoxycarbonyl.

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Flashback: 50 Years Ago . . .

1965 saw the 100th anniversary of Kekulé's rationalization of the benzene ring structure. In a Review, Hermann Hartmann described the history of the benzene formula, including a discussion of Hückel's theory of aromaticity. To mark the 150th anniversary, this journal published an Essay earlier this year by Alan Rocke that gives a comprehensive history of how Kekulé approached the problem (see *Angew. Chem. Int. Ed.* **2015**, *54*, 46).

The structure of benzene was the subject of further Reviews: Georg Wittig discussed the generation and reactions of 1,2-didehydrobenzene, and Eugen E. van Tamalen and Heinz G. Viehe discussed valence-bond isomers of aromatic systems and substituted benzenes (such as Dewar benzene and prismane), respectively.

Hans Bock reported on a new aromatic substitution reaction in the form of dialkylamination. The reaction of N-chlorodialkylamines with aromatic compounds could be achieved by heating or irradiating the reactants in sulfuric acid, or by heating with a Lewis acid catalyst. For Bock's Obituary, see *Angew. Chem.* **2008**, *47*, 2912.

Max Schmidt described the reactions of diphenylphosphinotriphenyltin with compounds such as CS_2, COS, and $CSCl_2$. The reactions were postulated to proceed by a four-centered concerted mechanism at the Sn–P bond.

Read more in Issue 9/1965.