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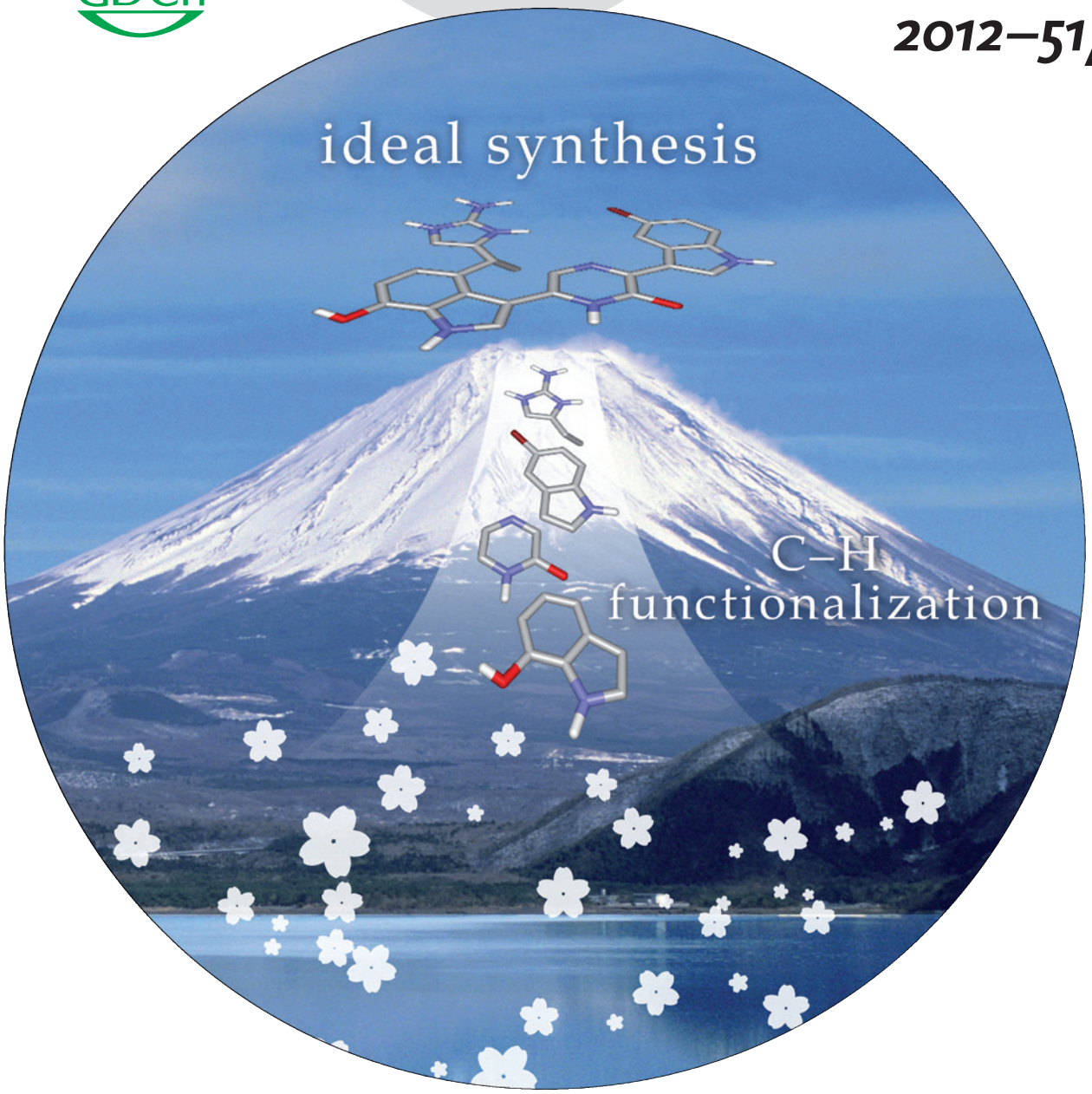

C–H Functionalization
Review by J. Yamaguchi, A. D. Yamaguchi, and K. Itami

Radical Trifluoromethylation
Minireview by A. Studer

Paradigm Shifts in Organic Synthesis
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Highlights: Secondary Alkylboronates · Gold in Total Synthesis

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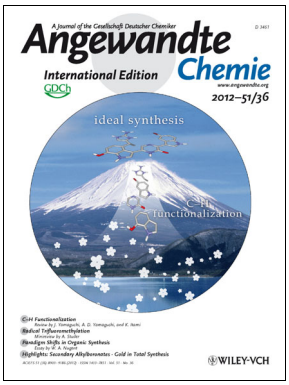
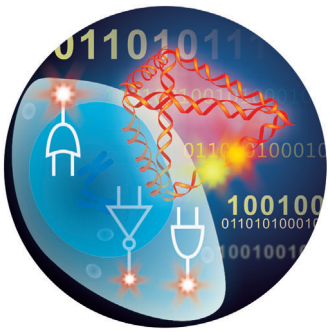
Cover Picture



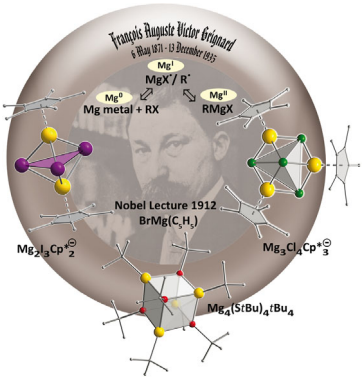
Junichiro Yamaguchi,* Atsushi D. Yamaguchi, and Kenichiro Itami*

The functionalization of C–H bonds has become an enabling tool in the synthesis of pharmaceutically relevant compounds and biologically active natural products. J. Yamaguchi, A. D. Yamaguchi, and K. Itami show in their Review on page 8960 ff. how it allows the summit (target compounds) to be reached in a most straightforward way. A series of studies not only streamlined the state-of-the-art synthesis of useful molecular entities, but also changed the way chemists plan and execute chemical syntheses.

Bioinorganic Inhibitors
Tumor necrosis factor-α can be inhibited by interrupting the homotrimer interaction with an iridium(III) biquinoline complex. In their Communication on page 9010 ff., C.-H. Leung et al. show high in vivo potency for this new organometallic protein inhibitor.



DNA-Based Logic Gates
Computation using biocompatible logic gates may be highly valuable for detection of small molecules within cells. In their Communication on page 9020 ff., C. Fan et al. create AND, OR, XOR, and INH logic gates using DNA.



Grignard Compounds
The nature of the redox process on going from Mg metal via Mg^{I} species is not fully understood. In their Communication on page 9025 ff., H. Schnöckel et al. show that MgR/MgX radicals are involved in the formation process of Grignard compounds.