

Density Functional Theory Study of the Mechanism and Origins of Stereoselectivity in the Asymmetric Simmons–Smith Cyclopropanation with Charette Chiral Dioxaborolane Ligand

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Pages 9345–9347. Our drawings in Figures 1–3 using 1/4 mol of **2-T** as the reference point are not correct mathematically. The corrected Figures 1–3, using 1 mol of **2-T** as the reference point, are presented here. To reduce the overestimation of the entropy contribution in solution for the bimolecular processes (the dimerizations of **2-M** to **2-D** and **2-D** to **2-T**), the entropy values in solution from **2-M** to **2-D** and **2-D** to **2-T** are estimated to be 50% of their originally computed gas-phase values (for details, see the Supporting Information). Therefore, aggregates **2-D** (2 mol) and **2-T** (1 mol) in dichloromethane are more stable than **2-M** (4 mol) by 37.2 and 40.2 kcal in terms of free energy, respectively. The background cyclopropanation requires an overall activation free energy of 16.5 kcal/mol (from **2-T** to **TS-2-T**). In the absence of ligand **1**, tetramer **2-T** is the most stable and reactive cyclopropanation precursor. However, in the presence of a stoichiometric amount of ligand **1** (4 mol), tetramer **2-T** (1 mol) can be completely transformed to the chiral complex **2-L-O** (4 mol) because this process is exergonic by 15.7 kcal in CH_2Cl_2 , and the overall activation free energy for the generation of the racemic cyclopropane product via **TS-2-T** is 32.2 kcal/mol ($\mathbf{2-L-O} \rightarrow \mathbf{2-T} \rightarrow \mathbf{TS-2-T}$).

These corrections do not affect the conclusions in the original paper. We thank Prof. Daniel A. Singleton (Texas A&M University) for calling these to our attention.

■ ASSOCIATED CONTENT

S Supporting Information. Computational details, full citation of ref 11, and Cartesian coordinates of computed stationary points [corrected]. This material is available free of charge via the Internet at <http://pubs.acs.org>.

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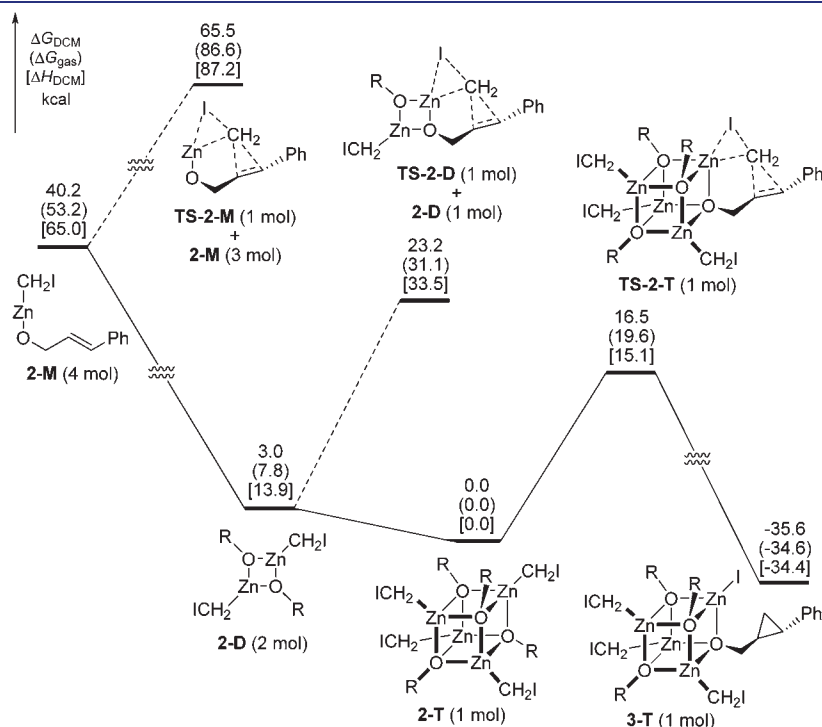


Figure 1. DFT-computed free energy surfaces for the cyclopropanation reactions of monomer **2-M**, dimer **2-D**, and tetramer **2-T** ($R = (E)\text{-PhCH=CHCH}_2$).

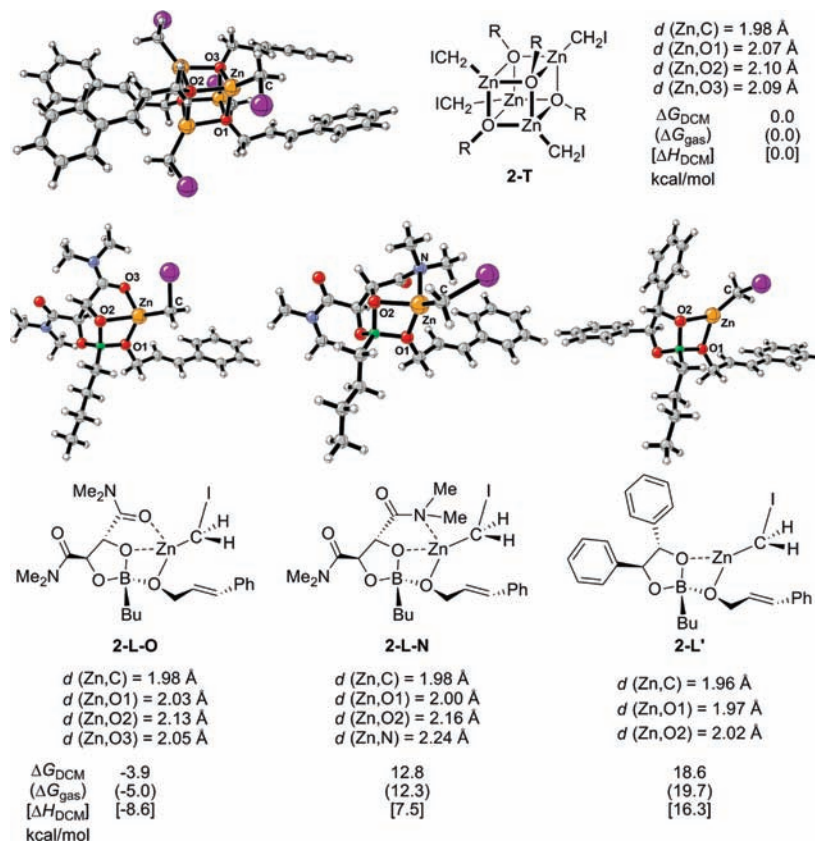


Figure 2. DFT-optimized structures of iodomethylzinc allyloxyde complexes 2-T, 2-L-O, 2-L-N, and 2-L' (carbon, gray; hydrogen, white; oxygen, red; nitrogen, blue; boron, green; zinc, orange; iodine, purple; energies are given in kcal/mol; R = (*E*)-PhCH=CHCH₂).

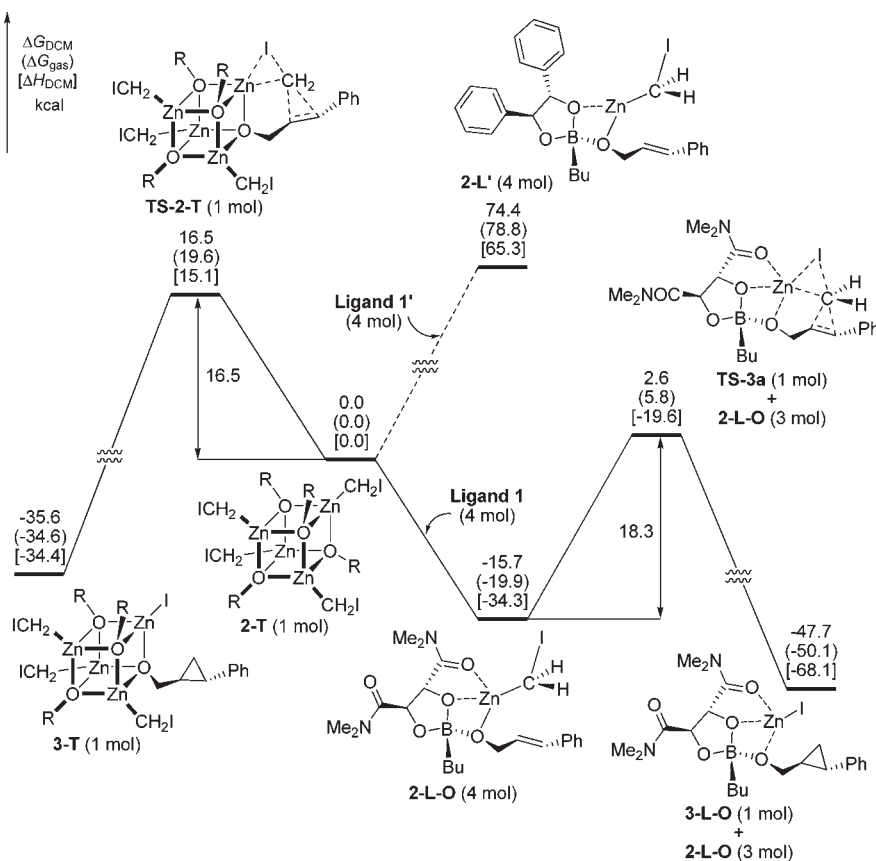


Figure 3. DFT-computed free energy surfaces for the cyclopropanation reactions of tetramer 2-T and the chiral zinc complex 2-L-O (R = (*E*)-PhCH=CHCH₂).