

component with respect to the other in a [2]rotaxane, the technology for building "molecular machines" will emerge.

The molecular shuttle described in this communication is the prototype for the construction of more intricate molecular assemblies<sup>2,16</sup> where the components will be designed to receive, store, transfer, and transmit information in a highly controllable manner, following their spontaneous self-assembly<sup>17,18</sup> at the supramolecular<sup>19</sup> level. Increasingly, we can look forward to a "bottom-up"

(16) For a recent communication on the ordered threading of molecular components, see: Anelli, P. L.; Ashton, P. R.; Spencer, N.; Slawin, A. M. Z.; Stoddart, J. F.; Williams, D. J. *Angew. Chem., Int. Ed. Engl.*, in press.

(17) For an outstandingly good review of self-assembly in synthetic routes to molecular devices, see: Lindsey, J. S. *New J. Chem.* **1991**, *15*, 153-180.

approach to nanotechnology<sup>20</sup> which is targeted toward the development of molecular-scale information processing systems.

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(18) For a review of self-assembly in organic synthesis, see: Philp, D.; Stoddart, J. F. *Synlett*, in press.

(19) (a) Lehn, J.-M. *Angew. Chem., Int. Ed. Engl.* **1988**, *27*, 89-112. (b) Lehn, J.-M. *Angew. Chem., Int. Ed. Engl.* **1990**, *29*, 1304-1319.

(20) *Artificial Life*; Langton, C. G., Eds.; Addison-Wesley: Redwood City, CA, 1989.

## Additions and Corrections

**Asymmetric Synthesis Using Diisopropyl Tartrate Modified (*E*)- and (*Z*)-Crotylboronates: Preparation of the Chiral Crotylboronates and Reactions with Achiral Aldehydes** [*J. Am. Chem. Soc.* **1990**, *112*, 6339-6348]. WILLIAM R. ROUSH,\* KAORI ANDO, DANIEL B. POWERS, ALAN D. PALKOWITZ, and RONALD L. HALTERMAN

Pages 6344 and 6345: The <sup>1</sup>H NMR data reported for (*R,R*)-diisopropyl tartrate (*E*)-crotylboronate (**2**) and (*R,R*)-diisopropyl tartrate (*Z*)-crotylboronate (**3**) were measured in C<sub>6</sub>D<sub>6</sub>, and not in CDCl<sub>3</sub>, as indicated in the tabulated spectroscopic data. <sup>1</sup>H NMR data for these reagents measured in CDCl<sub>3</sub> are as follows: **2** (500 MHz, CDCl<sub>3</sub>) δ 5.42-5.53 (m, 2 H), 5.11 (septet, *J* = 6.5 Hz, 2 H), 4.77 (s, 2 H), 1.83 (br d, *J* = 5 Hz, 2 H), 1.64 (br d, *J* = 5 Hz, 3 H), 1.28 (d, *J* = 6.3 Hz, 12 H); **3** (500 MHz, CDCl<sub>3</sub>) δ 5.47-5.58 (m, 2 H), 5.11 (quintet, *J* = 6.5 Hz, 2 H), 4.76 (s, 2 H), 1.83-1.92 (m, 2 H), 1.61 (d, *J* = 5 Hz, 3 H), 1.28 (d, *J* = 6.3 Hz, 12 H).

## Computer Software Reviews

**The MSDS Solution (TMS) and SCS Access, Version 1.05.** Logical Technology, Inc.: 5113 North Executive Drive, Peoria, Illinois 61614. List Prices: MSDS Solution \$995.00; SCS Access \$470.00; both \$1365.00. The MSDS yearly maintenance is \$205.00, while the SCS Access yearly subscription is \$495.00. A network version is also available for an additional \$850.00.

These software packages require minimally an XT (LTI recommends an AT) class IBM PC (or 100% compatible) with 640K RAM and a 20M hard disc operating with DOS 2.0 or higher. The MSDS Solution is a menu-driven outline program that allows one to enter information from a manufacturer's material safety data sheet (MSDS) into an organized format for easy filing and rapid information retrieval. OSHA's Hazard Communication Standard established the sensible guideline that all workers must have access to the safety information encapsulated in the MSDSs. Since the "worker's right-to-know" is geared more toward the industrial workplace, this software package is likely to have more application in industrial and government labs than in academia. (However, with OSHA's "Occupational Exposure to Hazardous Chemicals in Laboratories" there is currently a need in every laboratory.) The MSDS Solution allows these data to be quickly retrieved by a variety of means, including formula, product name, manufacturer, or MSDS number. Each MSDS is given a status assignment as either pending, current or non-current, or per the chemical's status in the inventory. There is a user hierarchy, allowing progressively more access and editorial power to higher ranking users. A "General User" may read current and non-current MSDS's and may utilize SCS Access to compile reports from the database. "MSDS Entry Personnel" may load and edit MSDS's and the

"Coordinator" may alter the status of MSDS's, assemble user lists, and import/export MSDS's.

The format of the MSDS has fields for specific information, including manufacturer's product information, physical and chemical properties, fire and explosion data, and component information, and space is set aside for comments.

Installation of the software is simple. The demo version of the program took 7 min to load on an IBM PS 2. The complete version took a little longer. (LTI reports that in the newest version they have the loading time to 2-5 min, depending on hardware.) Initially, we had some minor difficulties in getting the loaded software to run. A phone call to Logical Technology, Inc. resulted in helpful coaching.

The failure of the loaded software to run was a result of insufficient working memory due to memory resident programs. This intolerance of other resident programs is a potential downfall of this software (albeit a very small one). Given the size of many companies' chemical inventories and the number of MSDS's that would be stored in this type of data base, dedication of a PC may be recommended anyway and at any rate is a small price to pay for this organization, speed, and convenience. The smaller companies, or those with relatively small chemical inventories, who may wish to use their PC's in multiple capacities, will need to turn off any memory resident programs to run this system.

A time-saving option would be the ability to down load commercial (e.g. Aldrich) MSDS files into this data base. However, apparently electronic MSDS's have not been standardized industry wide and it was the opinion of the helpful soul at Logical Technology, Inc. that such importing would not be possible without additional programming. So,