

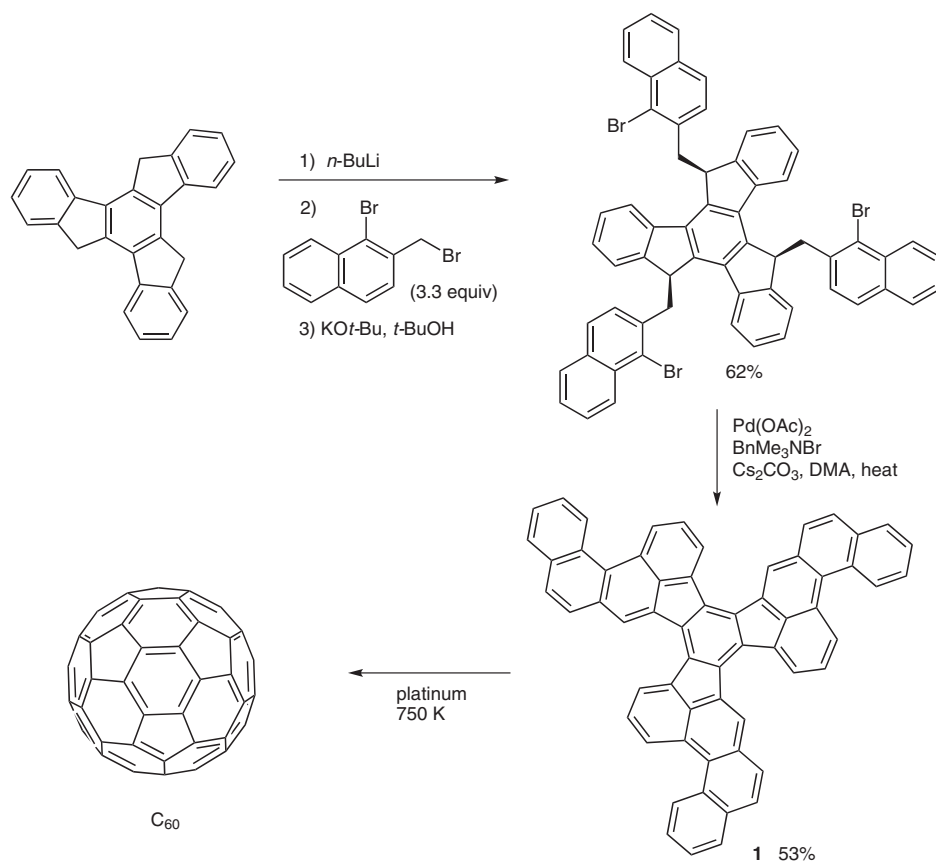
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G. OTERO, G. BIDDAU, C. SÁNCHEZ-SÁNCHEZ, R. CAILLARD, M. F. LÓPEZ, C. ROGERO, F. J. PALOMARES, N. CABELLO, M. A. BASANTA, J. ORTEGA, J. MÉNDEZ, A. M. ECHAVARREN, R. PÉREZ, B. GÓMEZ-LOR,* J. A. MARTÍN-GAGO* (INSTITUTO DE CIENCIA DE MATERIALES DE MADRID, UNIVERSIDAD AUTÓNOMA DE MADRID, CENTRO DE ASTROBIOLOGÍA, MADRID AND INSTITUTE OF CHEMICAL RESEARCH OF CATALONIA, TARRAGONA, SPAIN)

Fullerenes from Aromatic Precursors by Surface-Catalysed Cyclodehydrogenation

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Facile Synthesis of Fullerenes



Significance: In 2002, Scott et al. reported a rational chemical synthesis of C_{60} from an aromatic precursor (*Science* **2002**, 295, 1500). In this report, the authors describe a more succinct synthesis and utilize the method to synthesize fullerene and triazafullerene (C_{57}N_3).

Comment: Polycyclic aromatic precursor **1**, upon heating to 750 K on platinum surface, cyclizes to form fullerene. Gold surface cannot catalyze this process, suggesting that a strong interaction between the precursor and platinum surface is important. When a partially deuterated precursor was used, the authors observed evolution of D_2 and HD. The cyclization reaction seems to involve release of hydrogen atoms to the surface of platinum followed by a spontaneous, stepwise folding of the molecule.

SYNFACTS Contributors: Timothy M. Swager, Jeewoo Lim
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