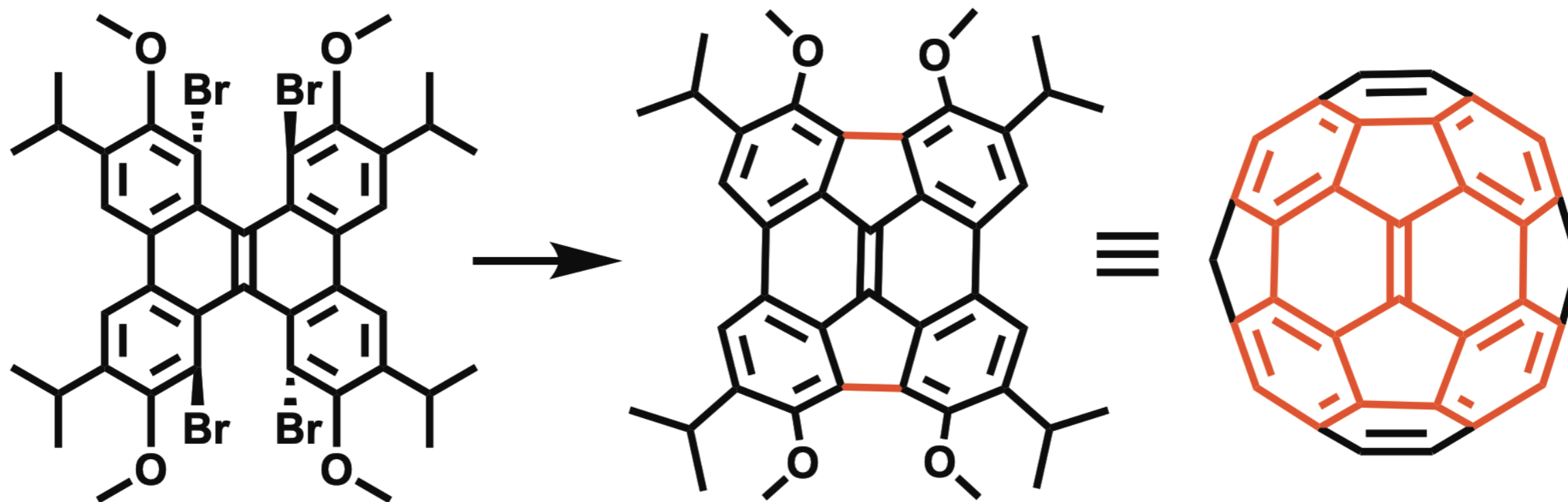


Solution-Phase Synthesis of Diindeno(1,2,3,4-*defg*:1',2',3',4'-*mnop*)chrysene Derivatives

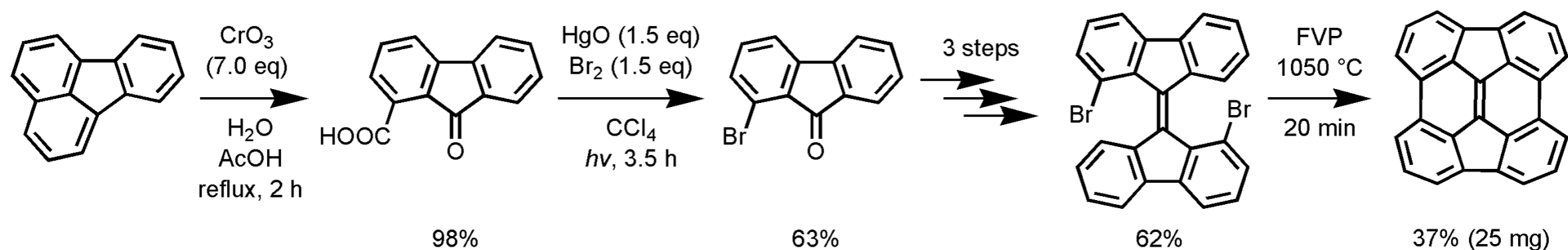


Up to 2.1 g

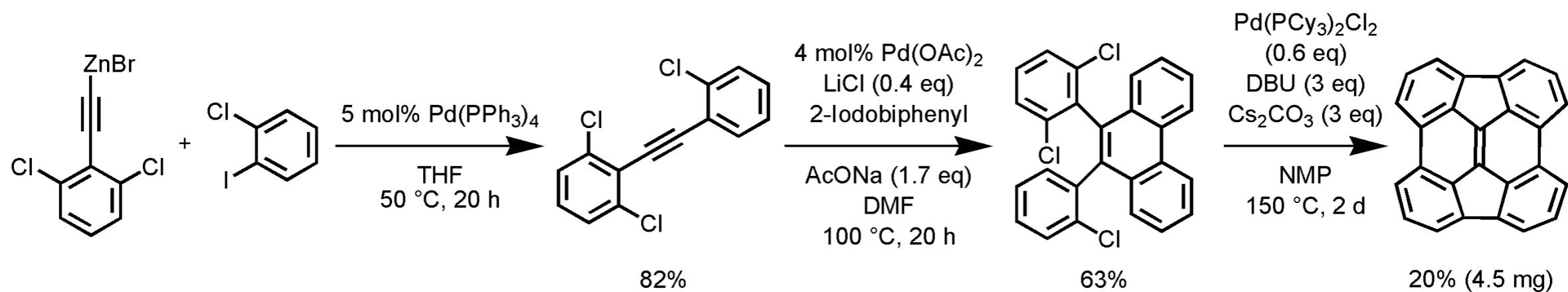
Buckybowl

N. Yoshida, R. Akasaka, Y. Awakura, T. Amaya, T. Iwasawa, *Eur. J. Org. Chem.* **2021**, 5343-5347.

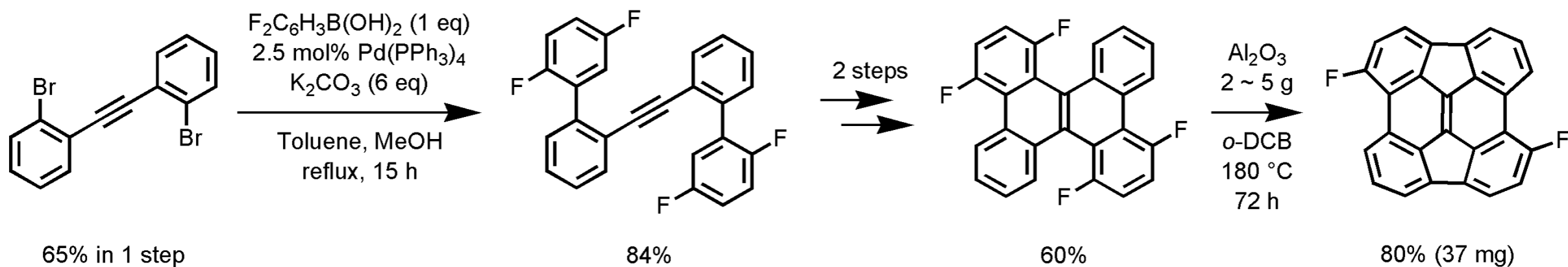
Background: While two outstanding corannulene and sumanene have been famed, DIC is underrepresented owing to the low productivity.



H. E. Bronstein, N. Choi, L. T. Scott, *J. Am. Chem. Soc.* **2002**, *124*, 8870-5.

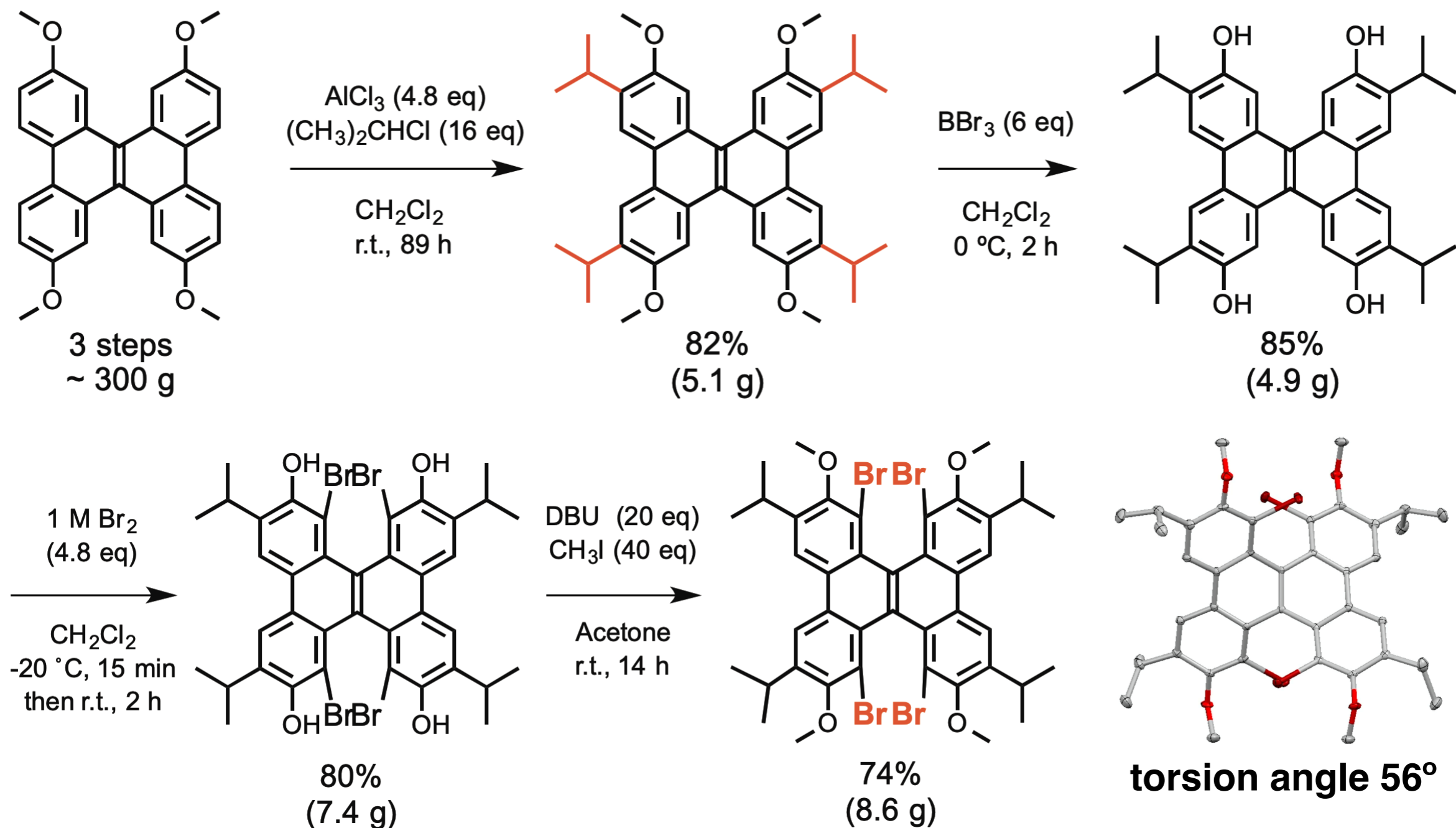


H. I. Chang, H. T. Huang, C. H. Huang, M. Y. Kuo, Y. T. Wu, *Chem. Commun.* **2010**, *46*, 7241-3.

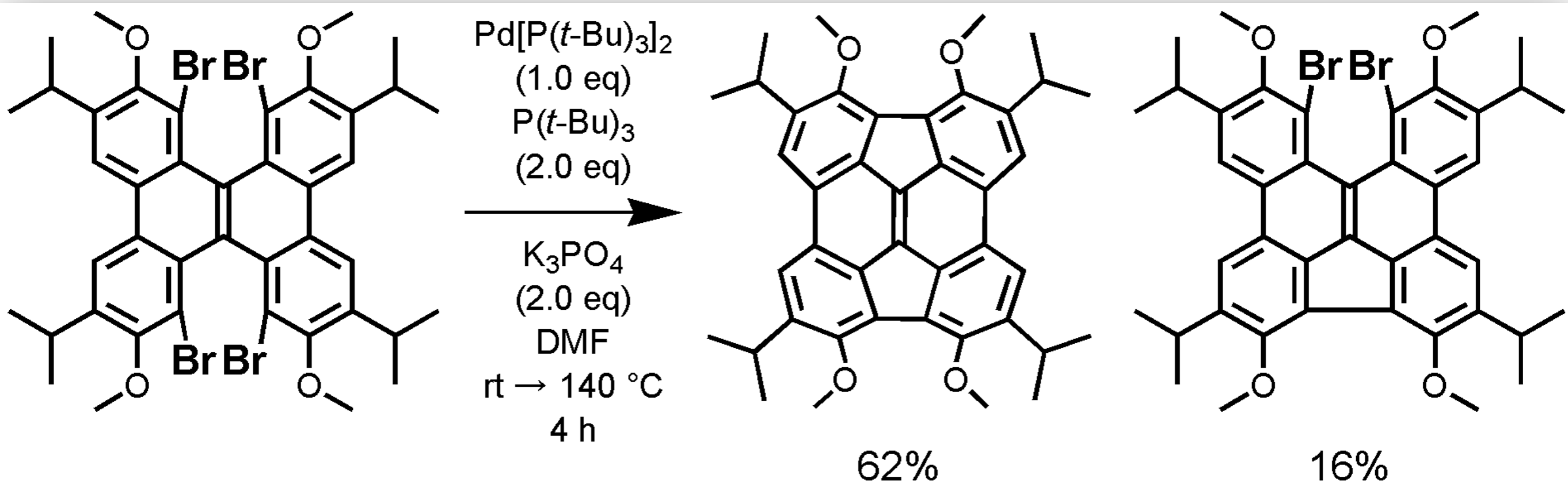


V. Akhmetov, M. Feofanov, S. Troyanov, K. Amsharov, *Chem. Eur. J.* **2019**, *25*, 7607-12.

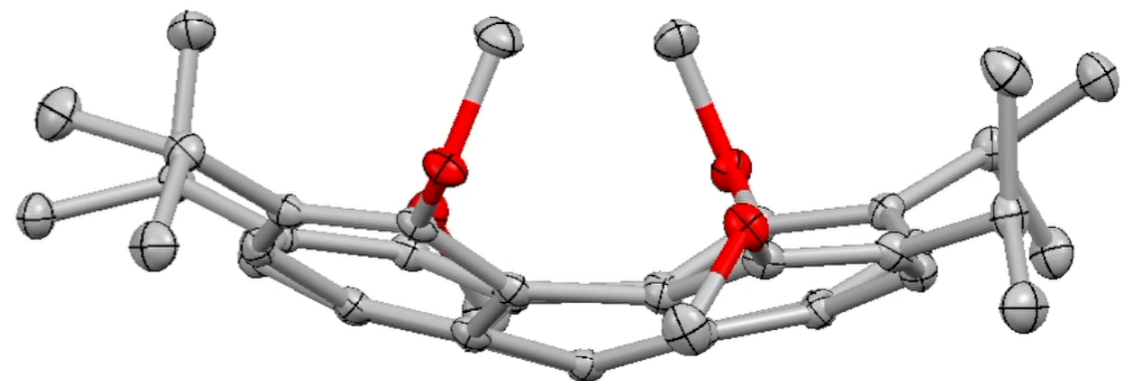
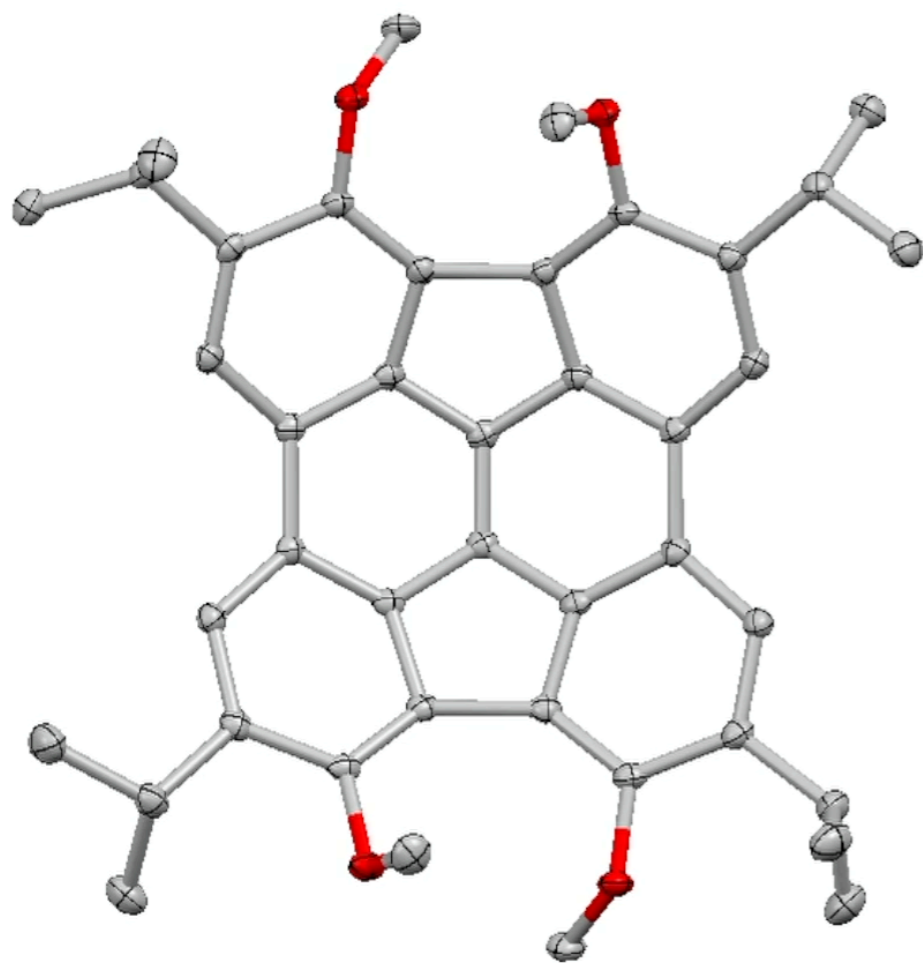
Precursor synthesis: Dibenzo[*g,p*]chrysene having four *iso*-propyls, four methyl ethers, and four bromines was prepared.



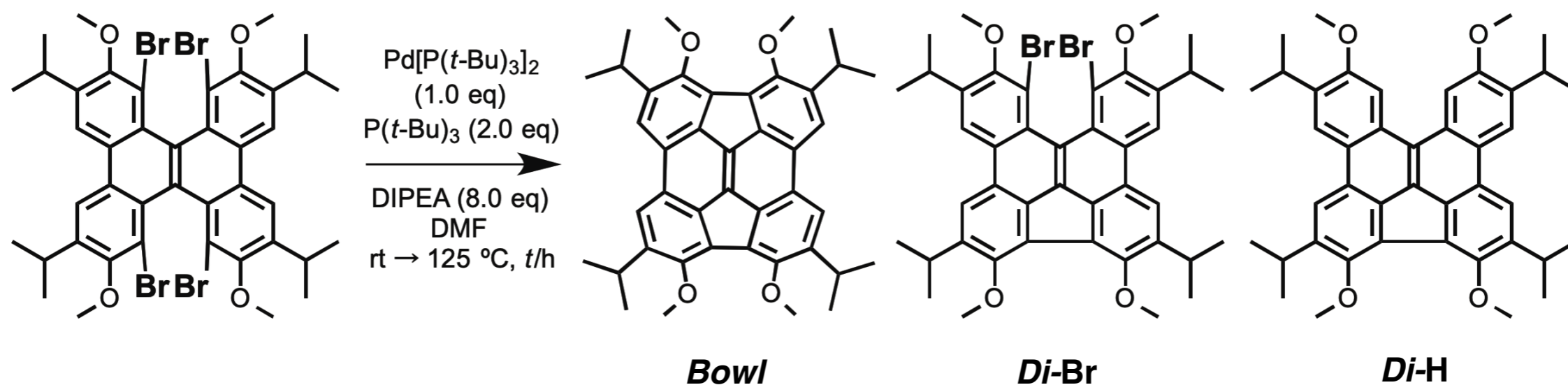
Ring-closing reactions: Preliminary experiments led to identification of a base set of the starting condition, in which Pd[P(*t*-Bu)₃]₂ was effective at 140 °C.



X-ray structure: result of a gently curved pi-surface (*i*-Pr)

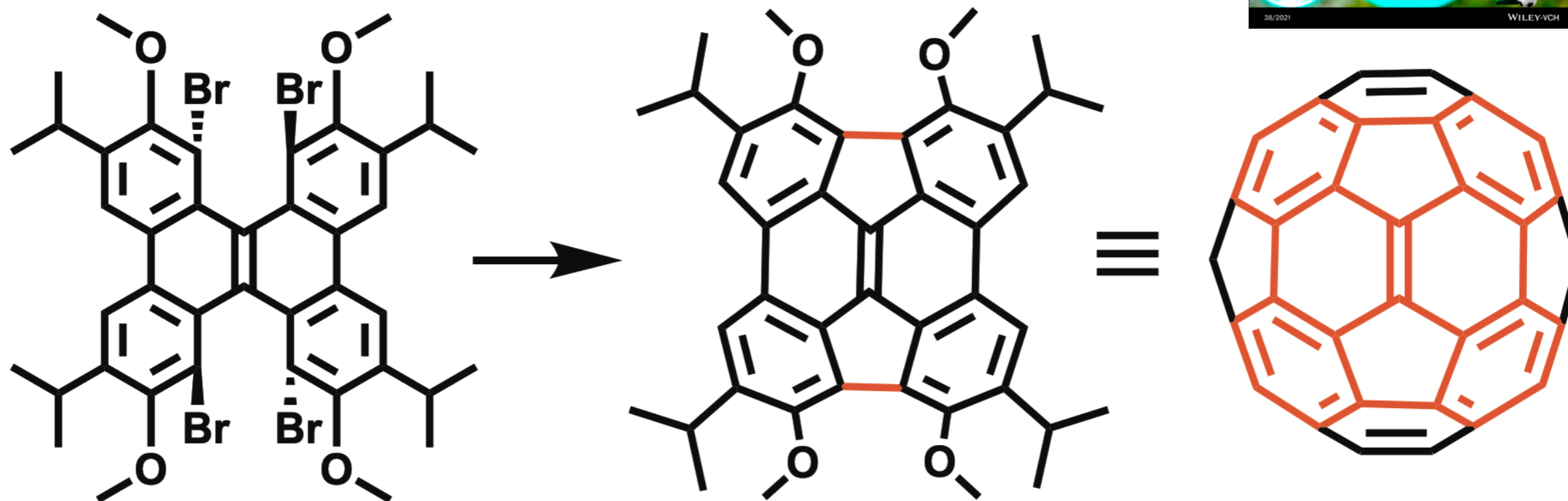


Gram-scale synthesis: the solution-processable protocol went well without serious loss of chemical yields.



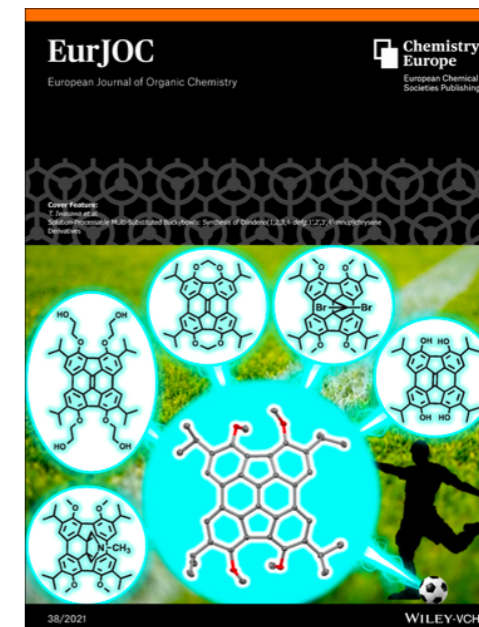
Scale		t/h	%Yield		
mmol	gram		<i>Bowl</i>	<i>Di-Br</i>	<i>Di-H</i>
0.15	0.14	1	68	0	25
0.45	0.42	1	67	3	5
1.4	1.3	2	66	0	10
2.7	2.5	2	66 (1.1 g)	0	14
5.4	5.1	2	62 (2.1 g)	0	19

Summary: Solution-phase synthesis of the DIC-typed buckybowls was achieved in gram scale.



Up to 2.1 g

Buckybowl



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