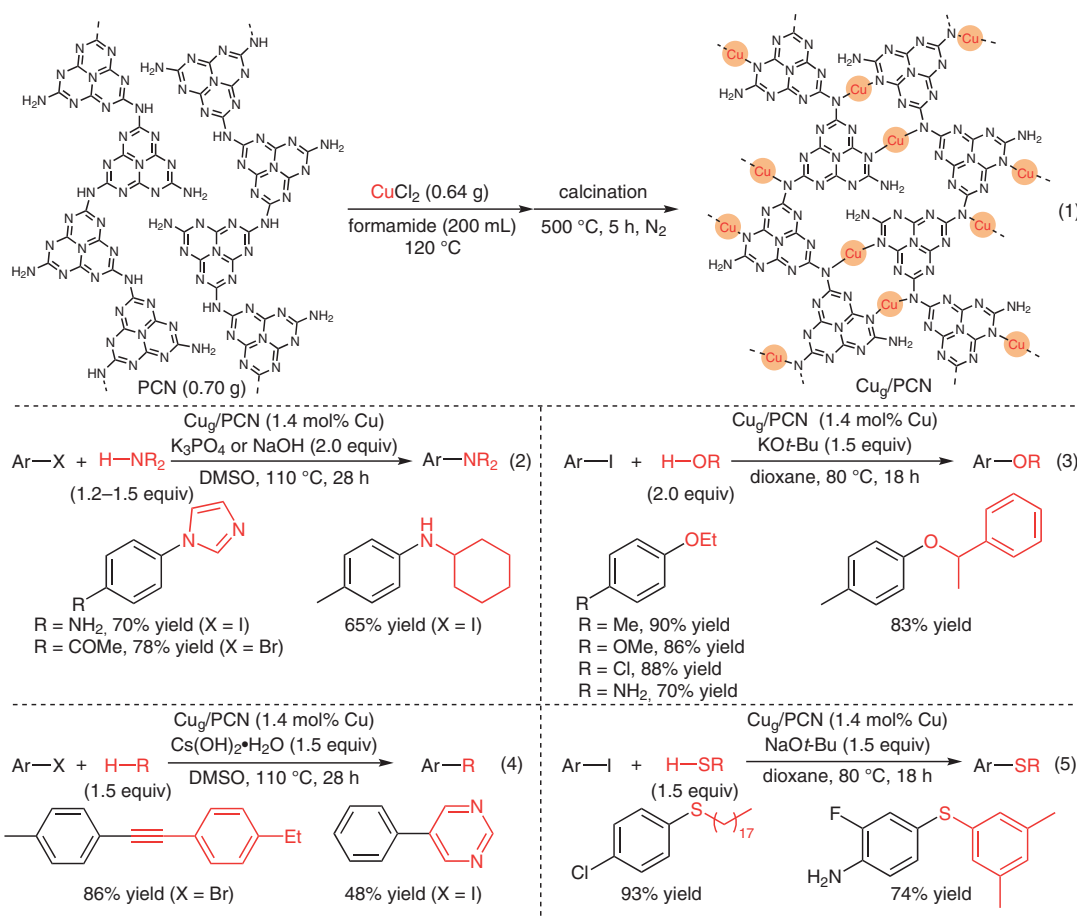


X. HAI, Y. ZHENG, Q. YU, N. GUO, S. XI\*, X. ZHAO, S. MITCHELL, X. LUO, V. TULUS, M. WANG, X. SHENG, L. REN, X. LONG, J. LI, P. HE, H. LIN, Y. CUI, X. PENG, J. SHI, J. WU, C. ZHANG, R. ZOU, G. GUILLÉN-GOSÁLBEZ, J. PÉREZ-RAMÍREZ\*, M. J. KOH\*, Y. ZHU\*, J. LI\*, J. LU\* (NATIONAL UNIVERSITY OF SINGAPORE AND AGENCY FOR SCIENCE, TECHNOLOGY AND RESEARCH, SINGAPORE; ETH ZURICH, SWITZERLAND; TSINGHUA UNIVERSITY, BEIJING AND SOUTHERN UNIVERSITY OF SCIENCE AND TECHNOLOGY, SHENZHEN, P. R. OF CHINA)

Geminal-Atom Catalysis for Cross-Coupling

*Nature* 2023, 622, 754–760, DOI: 10.1038/s41586-023-06529-z.

## Cross-Coupling Reactions Catalyzed by Regularly Spaced Copper Atom Pairs on Polymeric Carbon Nitride



**Significance:** A heterogeneous copper catalyst supported on polymeric carbon nitride ( $\text{Cu}_9/\text{PCN}$ ) catalyzed cross-coupling reactions of aryl halides with amines, alcohols, alkynes, arenes, or thiols, resulting in the formation of the corresponding C–N, C–O, C–C or C–S coupled products (eqs. 2–5).

**Comment:**  $\text{Cu}_9/\text{PCN}$  was prepared according to equation 1.  $\text{Cu}_9/\text{PCN}$  contains regularly spaced copper atom pairs, with a Cu–Cu distance of approximately 4 Å.

**SYNFACTS Contributors:** Yasuhiro Uozumi, Shintaro Okumura  
 Synfacts 2024, 20(02), 0171 Published online: 16.01.2024  
 DOI: 10.1055/s-0043-1772976; Reg-No.: Y01524SF

© 2024, Thieme. All rights reserved.  
 Georg Thieme Verlag KG, Rüdigerstraße 14, 70469 Stuttgart, Germany

Category

Polymer-Supported Synthesis

Key words

cross-coupling

carbon nitride

heterogeneous catalyst

Synfact of the Month

This document was downloaded for personal use only. Unauthorized distribution is strictly prohibited.