A. K. CLARKE, M. J. JAMES, P. O'BRIEN, R. J. K. TAYLOR,* W. P. UNSWORTH*
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Silica-Supported Silver Nitrate as a Highly Active Dearomatizing Spirocyclization Catalyst: Synergistic Alkyne Activation by Silver Nanoparticles and Silica
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Spirocyclization of Alkyne-Tethered Aromatics with Silver Nitrate/Silica

Indoles:

Phenols:

Pyrroles:

Significance: Silica-supported silver nitrate ($\text{AgNO}_3/\text{SiO}_2$) catalyzed the dearomatizing spirocyclization of alkyne-tethered aromatics to give the corresponding spirocycles in 86–100% yield (eqs. 1–4).

Comment: The continuous-flow reaction of 1-(1*H*-indol-3-yl)-4-phenylbut-3-yn-2-one on a column of $\text{AgNO}_3/\text{SiO}_2$ gave 5-phenyl-3*H*-spiro[cyclopent-4-ene-1,3'-indol]-3-one in quantitative yield (eq. 5).

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