Hydrosilylations Catalyzed by Iron-Doped Metal–Organic Layers

**Significance:** Metal–organic layers (MOLs) composed of $[\text{Hf}_{6}\text{O}_{4}(\text{OH})_{4}(\text{HCO}_{2})_{6}]$ secondary building units and $4,4',4''$-benzene-1,3,5-triyltribenzoate (BTB) bridging ligands were prepared. The MOL structures were doped with $4'$-($4$-carboxylatophenyl)-$2,2':6',2''$-terpyridine-$5,5''$-dicarboxylate (TPY) and FeBr$_2$ to afford the solid material Fe-TPY-MOL, which catalyzed the hydrosilylation of terminal olefins. For example, the reaction of styrene (1) with phenylsilane (2) proceeded in the presence of Fe-TPY-MOL to give the linear silane 3 in quantitative yield.

**Comment:** In the reaction of styrene (1) with phenylsilane (2), the Fe-TPY-MOL catalyst showed a better performance than the metal–organic framework-based catalysts Fe-TPY-MOF1 (prepared from an interlocked Hf-MOF instead of the MOLs), Fe-TPY-MOF2 (prepared from a stacked Hf-MOF instead of the MOLs), or the homogeneous counterpart Fe-TPY (prepared from FeBr$_2$, TPY, and NaBH$_3$). When Fe-TPY-MOF1, Fe-TPY-MOF2, and Fe-TPY were employed as catalysts for the reaction, the ratios of products 3 and 4 were 0:0, 30:0, and 3:43, respectively.