Molecular oxygen is by far the most attractive terminal oxidant for catalyzed oxidations, one of the central transformations in organic chemistry. Guest Editor Professor Shannon Stahl has assembled a diverse set of experts in the field of catalytic aerobic oxidations, highlighting accomplishments and ongoing challenges in this important area.

Tom Rovis
Cluster

D. Yang

aliphatic alkenyl amides
X = C, NTs; n = 1, 2

Pd(II)/ligand

O2

13 examples
up to 74% yield

N-heterocycles

R = alkyl

FeCl2·4H2O (10 mol%) Salicylic acid (1 equiv) Thiourea (0 or 2 equiv)

DMSO, O2

100–120 °C, 24 h

27–91% 15 examples

B. U. W. Maes

M. Shibuya

N. Jiao

Z. Li

NOx / Air