The Role of Catalysis for the Energy-Transition
DGMK Conference October 5-7, 2022, Ludwigshafen

Opportunities and Challenges in Industrial Selective Oxidation Processes

K. Amakawa
BASF SE, Ludwigshafen, Germany

Abstract

Selective oxidation processes belong to the energy-intensive base chemical segment with large product volume accompanied by significant CO_2 emissions. The CO_2 emission of a product comprises direct emissions during the production (Scope 1 emission), indirect emissions from the generation of energy (Scope 2 emission) and CO_2 footprints of raw materials (Scope 3 emission). Options for reduction of CO_2 emissions include (1) efficiency measures to reduce consumption of raw material and energy, (2) use of green energy, (3) use of green raw materials with and without alternation of production process, (4) reducing CO_2 emission by carbon capture. These options exhibit a broad spectrum of technological and economic feasibility. This contribution discusses some examples how industrial catalytic oxidation processes tackle the challenge to reduce CO_2 emission.