

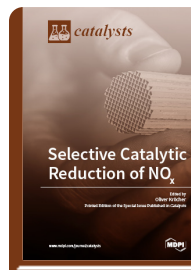
Special Issue Reprint

Selective Catalytic Reduction of NO_x

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The most efficient process to reduce NO_x emissions from lean exhaust gases, selective catalytic reduction (SCR) with ammonia, has undergone tremendous development over the past decades. Originally only applied in stationary power plants and industrial installations, SCR systems are now installed in millions of mobile diesel engines, ranging from off-road machineries, to heavy-duty and light-duty trucks and passenger cars, to locomotives and ships. All of these applications involve specific challenges due to tighter emission limits, new internal combustion engine technologies, or alternative fuels.

Three review articles and 14 research articles in this book describe recent results and research trends of various aspects of the SCR process. Reaction engineering aspects, such as the proper dosage of ammonia or urea, respectively, are as important as further developments of the different SCR catalysts, by deepening the understanding of their functionality or by systematic improvements of their properties, such as low-temperature activity, selectivity, or poisoning-resistance. Another covered aspect is cost reduction through the use of cheaper base materials for the production of active and stable SCR catalysts. Finally, research efforts are reported to develop SCR processes with different reducing agents, which would open doors to new applications in the future. The range of topics addressed in this book will stimulate the reader's interest as well as provide a valuable source of information for researchers in academia and industry.

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