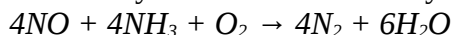


SCR “standard” is selective catalytic reduction of NO by ammonia in the presence of O₂:



Selectivity (σ) is the ratio of the mass of the target product to the total mass of the products obtained in the reaction. Selectivity characterizes the predominance of one of the directions of the process, if the transformation of raw materials leads to the formation of several final products.

Selectivity of the catalyst is the reagent share (in %) which has turned into a target product, to a share of the reacted reagent. It shows degree in which the catalyst is capable to accelerate reaction with formation of a target product instead of the side (undesirable) reaction. Depending on a way of calculation distinguish integrated and differential selectivity.

The semiconductor is a material which conductance increases exponentially in case of increase in temperature owing to thermal generation of the free charge carriers under the Van Hoff law. Energy of the forbidden band of the intrinsic semiconductor can be about 2 eV. The intrinsic semiconductor represents material with insignificant defect concentrations and impurity in which thermal excitation leads to interzonal generation both electrons, and holes with identical concentration of both types of carriers. This condition requires small energy of the forbidden band of the semiconductor. In process of growth of crystals these materials are doped by trace quantities of other elements for creation of the areas of n-or p-types.

Sintering is an accretion (fusion) of small crystals with formation of agglomerates of various size. At the same time there is a disorder consolidation of structure. At sintering, unlike crystallization, the unstable and disorder structure is formed. Sintering is always followed by simultaneous decrease in specific surface area and volume of pores that leads to irreversible deactivation of the catalyst. Accelerated sintering of catalysts can be caused by overheating in industrial devices. Coked sections on the surface of heterogeneous catalysts also tend to be sintered due to overheating.

The size of the pore is the distance between the opposite walls of the pore.

The skeleton catalyst is a highly disperse metal catalyst obtained by leaching from alloys. The first step in the preparation of the skeletal catalyst is the preparation of an alloy of the active component with aluminum (or other reactive metal). In the second stage, the aluminum is removed from the alloy by the action of an alkali. This results in the formation of a highly disperse metal phase of the active component. Advantages of skeletal catalysts are high mechanical strength and high thermal conductivity. The most frequently used skeletal catalyst is Raney nickel.

Smoke gas is a gas emitted by a source of atmospheric pollution during combustion of fuel.

Society of Automotive Engineers (SAE) is a source of technical information and experience used in the design, manufacture, maintenance and management of vehicles for use on land or sea, in the air or in outer space. At the beginning of the XX century in the United States there were already several dozen automotive manufacturers. In this regard, many engineers of the automotive industry expressed their desire to have a “free exchange of ideas” in order to increase the individual technical base. So, in 1905, Andrew Riker headed the Community of Automotive Engineers, with a staff of only 30 people, and became its president. During the first 10 years, the membership of the community has grown steadily. And most importantly, young talented engineers appeared in the staff of staff who published technical journals and a full selection of technical documentation - SAE Transactions, which exists to this day, but changed its name to SAE International’s Journals. Today the community numbers more than 121,000 people - engineers, supervisors, teachers and students from more than 97 countries. A joint research program contributes to the promotion of projects that benefit the automotive industry as a whole. Numerous meetings and exhibitions provide global opportunities for the SAE network and information. SAE also offers a full range of professional development activities, such as seminars, technical symposiums and electronic training.