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Sommario/riassunto	<p>Catalyst deactivation, the loss over time of catalytic activity and/or selectivity, is a problem of great and continuing concern in the practice of industrial catalytic processes. Costs to industry for catalyst replacement and process shutdown total tens of billions of dollars per year. While catalyst deactivation is inevitable for most processes, some of its immediate, drastic consequences may be avoided, postponed, or even reversed. Accordingly, there is considerable motivation to better understand catalyst decay and regeneration. Indeed, the science of catalyst deactivation and regeneration has been developing rapidly as evidenced by the considerable literature addressing this topic, including 21,000 journal articles, presentations, reports, reviews, and books; and more than 29,000 patents for the period of 1980 to 2012. This developing science provides the foundation for continuing, substantial improvements in the efficiency and economics of catalytic processes through development of catalyst deactivation models, more stable catalysts, and regeneration processes. This special issue focuses on recent advances in catalyst deactivation and regeneration, including advances in (1) scientific understanding of mechanisms; (2) development of improved methods and tools for investigation; and (3) more robust models of deactivation and regeneration.</p>