Selective Oxidation of Organic Substrates to Partially Oxidized Products

APPLICATION AREAS
Oxidation of Alcohols to Aldehydes or Ketones

ABSTRACT
Ozone is recognized as a potent and effective oxidizing agent with numerous commercial uses, including use as an industrial oxidant and water treatment. Building on research related to iron catalysis in oxidations by ozone, Iowa State University and Ames Laboratory researchers have developed an approach for selective oxidation in an environmentally friendly manner to obtain industrially important aldehydes and ketones. Because this approach uses mild reaction conditions and eliminates toxic waste compounds, it may have utility for the production of aldehydes and ketones, whose versatile properties make them valuable starting materials for numerous products.

BENEFITS
- Rapid and controlled rate of catalysis
- Environmentally friendly: ozone naturally decomposes to oxygen
- Versatile: suitable for any applications and/or substrates for which ozone is used as an oxidant

RELATED TECHNOLOGY
This technology is related to ISURF #3338, Iron Catalysis in Oxidations by Ozone, for which US Patent No. 7,618,546 has been issued.

REFERENCE

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INTELLECTUAL PROPERTY STATUS (August 2013)

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