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TECHNOLOGY FOR SCALE-UP AND DEMONSTRATION

Catalytic processes for α-campholenic aldehyde and carveol from α-pinene

Background and Current Challenges

- α-Campholenic aldehyde (CA) and carveol (CV) are two enormously important and industrially relevant perfumery compounds. While CA is used as the primary precursor of sandalwood oil, CV is known as a source of spearmint oil-like fragrance.
- Existing processes for these chemicals employ environmentally questionable reagents and additives leading to production of (over) stoichiometric industrial wastes with an increase in the environmental hazards.

Features of CSMCRI Process

CSMCRI process comprises of a two-step synthetic route starting from inexpensive α-pinene

- An environmentally less hazardous process that employs indigenous raw materials; Clean process giving water as the by-product
- Scaled up to 1 kg level
- High yield (>85% for CA, ~75% for CV) and purity (~97% for CA, >95% for CV)
- The process is consistently reproducible and thus, reliable for industrial scale production

Business Scope

The total import of CA by Indian industries is significantly large. Owing to the cost-competitiveness and environmentally benign nature, the commercialization of the process is expected to result in import substitution of CA

TRL 4

DEMONSTRATION @ 1 KG