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**CONJUGATED LINOLEIC ACID FORMATION BY HYDROGENATION
ISOMERIZATION OF SAFFLOWER OIL OVER BIFUNCTIONAL NOVEL
STRUCTURED CATALYST**

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ABSTRACT Directed isomerization of safflower oil under very low hydrogen partial pressure of 7 psi over novel bifunctional and bimetallic highly structured catalysts, having narrow pore size distribution ranging from 4 to 8 nm, and BET-specific surface of 710-1000 m²/g, was investigated as a new chemocatalytic approach for vegetable oil hardening and simultaneously producing health-beneficial conjugated linoleic acids (CLA). Time course profiles of (cis-9, trans-11)-; (cis-10, trans-12)-; (trans-10, cis-12)-; (cis,cis)- and (trans,trans)-octadecadienoic isomers (CLAs) as well as the other fatty acids traditionally encountered during the hydrogenation of vegetable oils are presented for a non-optimized catalyst under selected process conditions. Preliminary results show that it is possible to tailor characteristics of the hydrogenation catalyst in a such way to confer it bi-functional activity: hydrogenation and conjugation isomerization.

Keywords: Mesostructured catalyst, Isomerization, Hydrogenation, Safflower oil, CLA.