

Supplementary material

BIODIESEL- A TRANSESTERIFIED PRODUCT OF NON-EDIBLE CASTOR OIL

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S1. Table 1 . Chemical structures of organotin(IV) carboxylate compounds

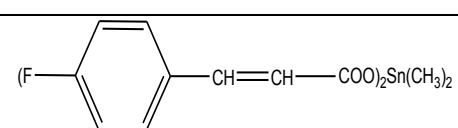
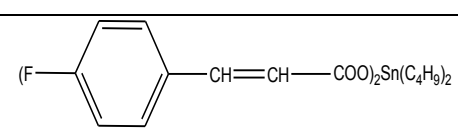
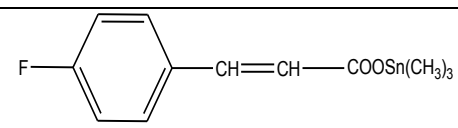
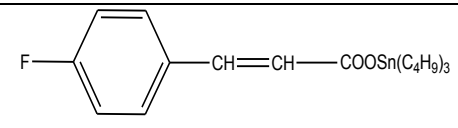
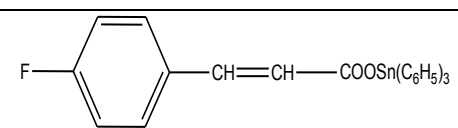
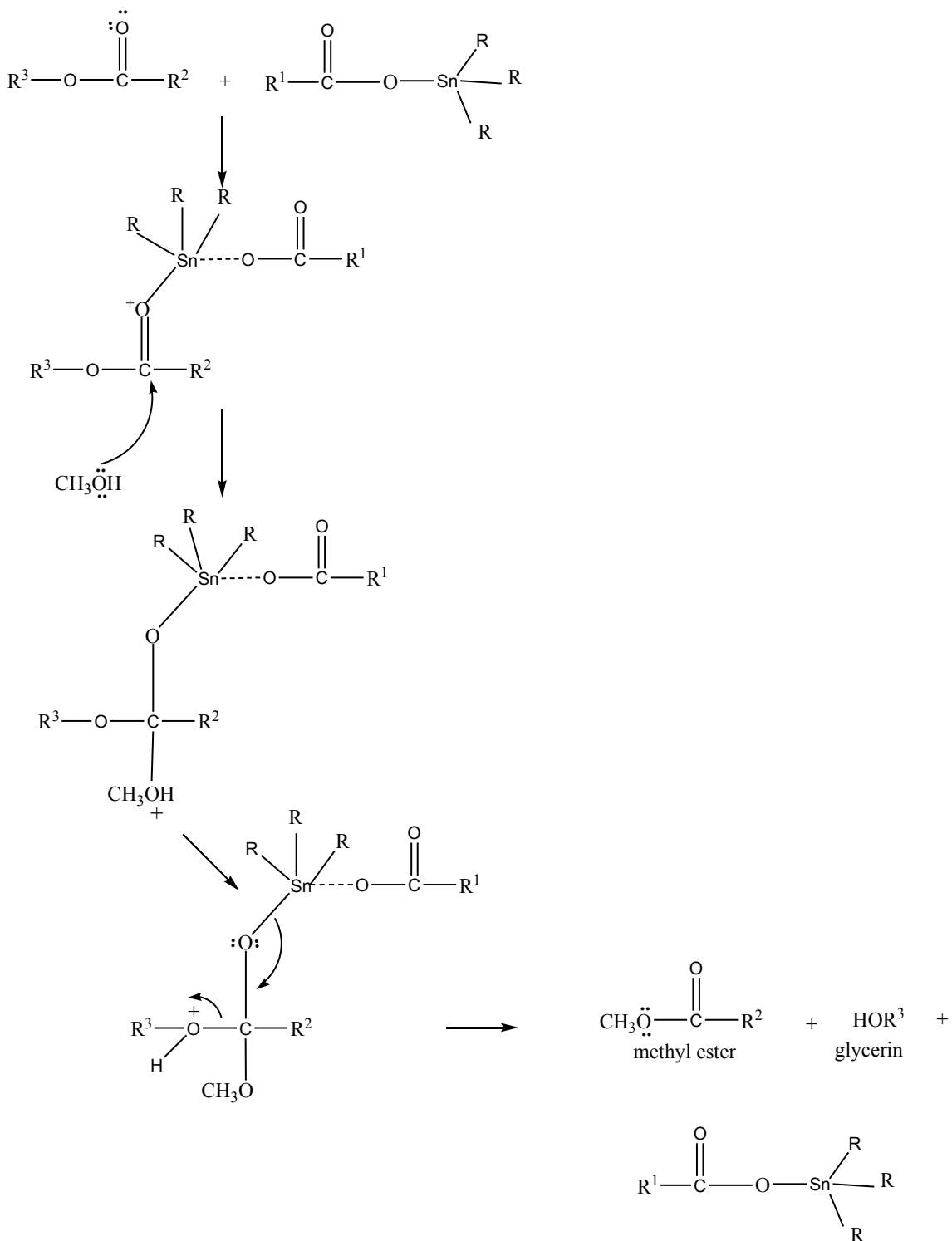
Comp. no.	Product (Structure)	Name
01	 <p>The structure shows a central tin atom (Sn) bonded to two methyl groups (CH₃) and two carboxylate groups. Each carboxylate group is part of an acrylate chain (CH=CH-COO-) which is attached to a 3-(4-fluorophenyl) group. The fluorophenyl group consists of a benzene ring with a fluorine atom (F) at the para position relative to the acrylate attachment point.</p>	Dimethyltin(IV) [bis(3-(4-fluorophenyl) acrylate)]
02	 <p>The structure is similar to compound 01, but the tin atom is bonded to two butyl groups (C₄H₉) instead of two methyl groups.</p>	Dibutyltin(IV) [bis(3-(4-fluorophenyl) acrylate)]
03	 <p>The structure shows a central tin atom (Sn) bonded to three methyl groups (CH₃) and one carboxylate group. The carboxylate group is part of an acrylate chain (CH=CH-COO-) which is attached to a 3-(4-fluorophenyl) group.</p>	Trimethyltin(IV) 3-(4-fluorophenyl) acrylate
04	 <p>The structure is similar to compound 03, but the tin atom is bonded to three butyl groups (C₄H₉) instead of three methyl groups.</p>	Tributyltin(IV) 3-(4-fluorophenyl) acrylate
05	 <p>The structure is similar to compound 03, but the tin atom is bonded to three phenyl groups (C₆H₅) instead of three methyl groups.</p>	Triphenyltin(IV) 3-(4-fluorophenyl) acrylate

Table S2. Important assigned vibrational bands in Infrared spectroscopic studies of castor biodiesel

Vibrational bands	Wavenumber(cm^{-1})
Methoxy C=O	1741
C-O	1017
Methyl(CH_3) stretching vibration band	2924
Methylene(CH_2) stretching vibration band	2854
Methine(CH) stretching vibration band	3007
Methyl(CH_3) bending vibration bands	1436, 1361
Methylene(CH_2) bending vibration band	1245
Methoxy methyl vibration bands	1196, 1170
Rocking CH_2 bending vibration band	723



S3. Proposed mechanism for transesterification of triglycerides into FAMES in the presence of organotin(IV) complexes