# ABSTRACT

Santos, L. R. F. "**Electrochemicals reductions and oxidations of methyl cinnamate esters phenylthio and ethylthio substituted in vinylics positions**", *2007*, 110 p.

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This work presents the studing of electrochemical behavior of sulfenyl cinnamates: the 3-phenyl-3-phenylthio-propenoic methyl ester, 2-phenyl-3-phenyl-propenoic methyl-ester, 3-phenyl-3-ethylthio-propenoic methyl ester, 2-ethylthio-3-phenyl-propenoic methyl ester. The overall plane includes the synthesis of substrates, the cyclic voltammetry and the preparative eletrolysis, enclosing the reductions and oxidations.

The synthesis of the three among the four chosen esters came from the same compound, the 3-phenyl-propenoic methyl ester, by Michael and radicals reactions with ethanethyol and thiophenol. The 2-ethylthio-propenoic methyl ester was achieved from the 2-ethylthio-acetic acid.

The cathodic reductions werw carried out in divided glass cells, dry acetonitrile or DMF as solvents, mercury as work electrode, inert atmosphere and controlled potential.

In some cases, was used a mixture of acetonitrile and methanol and only one experiment was performed in undivided cell. The products formed in $\beta$ and $\alpha$-sulfenyl substrates were not equal, because to the first the main role was the cleavage of the sulfur-carbon bond, giving methyl cinnamate ester, cinnamic acid, starting materials hydrogenateds, cyclopentanone and adipates derivatives. The others two isomers not exhibit the loss of sulfur group, forming hydrolisis products, cyclopentanones and hexanoates derivatives what keeping the sulfenyl groups.

The anodic oxidations was carried out in divided and undivided glass cells, with platine as work electrode, inert atmosphere and controlled current. Most of the electrochemicals reactions were run in protic reactional middle (acetonitrile/methanol), to furhter di and trimethoxylateds esters, $\beta$-keto-esters and thioketals (both ethyl and phenylthio).