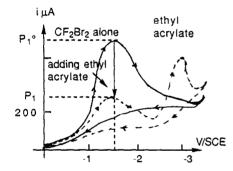
EVIDENCE FOR A TWO STEPS ELECTRON TRANSFER IN THE ELECTROCHEMICAL REDUCTION OF DIBROMODIFLUOROMETHANE AT CARBON

## A. MEDAGHRI-ALAOUI; H. CHOUKROUN; P. CALAS; C. AMATORE\*; A. COMMEYRAS

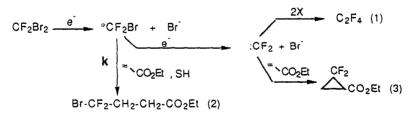
Université Montpellier II, Pl. E. Bataillon- 34095 MONTPELLIER Cedex 5 \*ENS, 24 rue Lhommond 75231 PARIS Cedex 5 (France)



In the presence of ethyl acrylate the height of the peak reduction of  $CF_2Br_2$  ( $P_1^{\circ}$ ) is lowered ( $P_1$ ). The ratio  $P_1/P_1^{\circ}$  can be reduced to 1/2, depending with concentration of the olefin and speed of the cathodic scan.

From these data it is possible to derive the kinetic parameter of the reaction of the intermediate radical °CF<sub>2</sub>Br on the olefin, yielding BrCF<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>CO<sub>2</sub>Et .

## Reduction of CF<sub>2</sub>Br<sub>2</sub> in the presence of ethyl acrylate.



Depending with the potential choosen for preparative scale electrolysis, the three compounds (1), (2), (3) are obtained.

These experiments outline the occurrence of an initial monoelectronic electrochemical transfer, during the reduction of CF<sub>2</sub>Br<sub>2</sub>, through the trapping of the intermediate radical °CF<sub>2</sub>Br in the presence of an activated olefin.