

## A NOVEL SYNTHESIS OF 2-FLUOROACRYLIC ACID

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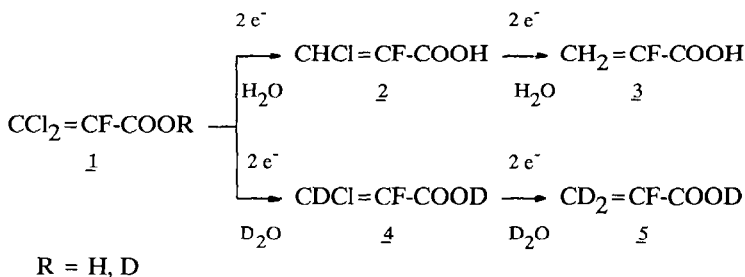
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Polymers of 2-fluoroacrylates obtained by free radical homo- or copolymerisation exhibit advanced mechanical and optical properties. Due to their high optical transparency they are particularly suited for manufacturing polymer optical fibers.

The transparency of poly-2-fluoroacrylates can be further improved by substituting the  $\beta$ -protons of the acid moiety by deuterium.

This novel synthesis of 2-fluoroacrylic acid optionally allows the preparation of hydrogen or deuterium substituted derivatives.



Key step of the synthesis is the electrocatalytical dechlorination of dichloro-2-fluoroacrylic acid (1) in aqueous media leading to 2-fluoroacrylic acid (3) via intermediate 2. Using deuterium oxide as solvent this electrochemical process affords the deuterated analogues 4 and 5, respectively, in excellent yields and high selectivity.

The preparation of dichloro-2-fluoroacrylic acid (1) will also be discussed.