



A.8.1 L'effet des ions argent sur la formation des arborescences d'eau

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A.8.1 The effect of silver ions on the formation of water trees.

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Abstract

In this paper, the characteristic properties of water trees grown in PE (polyethylene) immersed in $AgNO_3$ (Silver nitrate) solution as needle electrode are experimentally studied. The microstructure of water trees is observed by the scanning electron microscope (SEM). It was found that the water trees can be coloured during their formation, their areas being brownish-yellow and their growing fast. silver ion functioning during the formation of water trees is analyzed and discussed. silver ions are reduced into

metallic silver that is deposited in the microchannels of water trees.

Thus, after removing the electric field, the microchannels still remain. Furthermore, it is observed by means of SEM that there exist microchannels in water trees, with diameter from 0.2 to 0.5 μm . Based on EDAX experimental data, it has been found that the silver amount in water trees decreases with increase of the distance from probed point to electrode.