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## Enhanced uptake of water by oxidatively processed oleic acid

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**Abstract.** A quartz crystal microbalance apparatus has been used to measure the room temperature uptake of water vapour by thin films of oleic acid as a function of relative humidity, both before and following exposure of the films to various partial pressures of gas phase ozone. A rapid increase in the water-sorbing ability of the film is observed as its exposure to ozone is increased, followed by a plateau region in which additional water is taken up more gradually. In this fully-processed region the mass of water taken up by the film is about 4 times that of the unprocessed film. Infrared spectra of the films, measured after variable exposures to ozone, show dramatic increases in both the "free" and hydrogen-bonded O-H stretching regions, and a decrease in the intensity of olefinic features. These results are consistent with the formation of an oxygenated polymeric product or products, as well as the gas phase products previously identified.

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