

## **Chemical recycling of eyewear industry cellulose acetate waste for the recovery of acetic acid and plastic.**

Benedetta De Caprariis

Cellulose acetate is a thermoplastic biopolymer used mainly in the cigarette and eyewear industry. Its biodegradability is not straightforward due to the presence of plasticizers, especially for the eyewear industry. Chemical recycling of waste cellulose acetate can be an interesting solution for the recovery of the plasticizers and chemicals in order to increase the sustainability of the polymer production industry. Pyrolysis and hydrothermal liquefaction are effective processes for the recovery of diethyl phthalate and acetic acid from eyewear industry waste and their feasibility is here demonstrated.