

NATURAL POLYMERS AND ADDITIVES IN COMMODITY AND SPECIALTY APPLICATIONS: A CHALLENGE FOR THE CHEMISTRY OF FUTURE

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ABSTRACT

Polymers which are biodegradable in vivo and in the environment, often natural in their origin, are perceived by the public as a valuable alternative to non biodegradable plastics. However, biodegradability, although important, cannot be the only driving force for the market acceptance of so called “green” plastics and chemicals. The applications of traditional oil-based plastics and plastic additives span from commodities to specialties, due to their performances and sometimes affordable costs. Can naturally derived polymers and additives face the challenge of petro-plastics and chemicals? Can we use the experience acquired in the so-called “plastic age” to tailor the performances of natural polymers and polymer additives for a demanding technological world? The lecture reviews several experiences on the processing of natural biodegradable polymers and on their formulation with additives coming from natural sources to obtain blends, composites or gels.