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## New terpene-based polymers

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The use of readily available and naturally occurring feedstocks to overcome our reliance upon petroleum derived materials is a growing challenge for our society. One of the most attractive alternatives are terpenes, due to their natural abundance, their structural diversity and their availability from citrus and wood waste streams in the multi-tonne scale. There have been significant efforts in the past to create polymers from terpenes, but extensive studies have to date yielded only a few examples of low  $M_n$ , low  $T_g$  or cross-linked polymers. Therefore polymeric materials obtained from terpenes are still very limited. Our approach consisted on functionalizing a wide range of terpenes to create a variety of new acrylate and methacrylate monomers, via a 2-step methodology or a catalytic route, in a 50 g scale. These new terpene derived monomers are easily polymerisable via free radical or controlled/living polymerization. A variety of linear, branched and crosslinked polymers has been synthesized in a controlled fashion yielding polymers with very different properties and  $T_g$ s ranging between -18 and 142°C.

## Biography

M Fuentes Sainz originates from Santander (Spain) and obtained her MSc in Chemical Synthesis and Reactivity from the University of Oviedo. She joined the REFINE (Renewable Functional Materials) network in September 2012 as a PhD student in the University of Nottingham, where she is investigating the synthesis of new polymeric materials using terpenes.

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