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Araya Hermosilla, Rodrigo Andrés

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Propositions

Belonging to the PhD thesis

Thermally reversible thermoset materials based on the chemical modification of alternating aliphatic polyketones

Rodrigo Andrés Araya Herмосilla

1. The simple Paal-Knorr chemical modification of alternating aliphatic polyketones confers endless applications to these low-priced, industrial polymer resins (this and previous (ISBN 9789036762052; ISBN 9789036735766) PhD theses).
2. The synthesis of polymers with tuneable complementary reinforcement between reversible covalent and non-covalent chemical interactions constitutes a relevant contribution towards the preparation of tailor-made thermoset materials (chapters 2 and 3).
3. The irreversible covalent crosslinking is what hinder the re-processability and recyclability of conventional thermosets. The inclusion of thermally-reversible Diels-Alder covalent linkages assisted by hydrogen bonds clearly overcomes this drawback (chapters 2; 3 and 4).
4. The autonomic “intrinsic” self-healing property is an attribute only found, so far, in biological systems. However, electrically-responsive thermoset nanocomposites might pave the way toward the generation of self-repairing artificial tissues (chapter 6).
5. Ancestral human tribes practiced reciprocity to obtain wellness. In nature, the symbiotic (mutualism) relationship between animals gives equal benefits to different species. In materials science, the complementary reinforcement between different components gives outstanding performance to composite materials. One might speculate whether the same pattern applies here.
6. Q: Wouldn't be nice to eliminate the social inequality which is the most predominant and unalterable law in modern human life? (*revolutionary*)
R: Yes it would be nice. But be aware that modern slavery is the price we must pay for civilization (*reactionary*).
7. A biologist must study really a lot to get familiarized in the field of chemistry! But, to get familiar in the field of chemical engineering; you have to burn out your brain or become alcoholic and enjoy every step! Proost!
8. When you are a beginner in research and you come up with a great idea, you have to wait for the right moment to execute it. As George Carlin's joke says, "I have as much authority as the Pope, I just don't have as many people who believe it"!