Title: Polymeric Composites Processing: Structural Composites reinforced with carbon fiber and Composites reinforced with natural fibers - Characterizations Mechanical, Thermal and determination of the voids

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Proposal

Due to their high specific mechanical properties, composite materials are facing new demands, in which the capacity of mass production at a more affordable cost became important.

Currently, the industry is looking for new technological solutions, due to market pressure facing the economic and environmental requirements. In order to comply with environmental guidelines on CO_2 emissions, the next global goal involves reducing fuel consumption by about 50% until 2020 and another 20% until the year 2025. These goals can be achieved various ways, such as by using lighter structures, which is more profitable way from the industrial point of view.

Thus, industries that traditionally use metal alloys, turned to the research and development of polymeric composites, which have the advantage, when compared to metals, higher resistance to corrosion and fatigue and high mechanical performance with low weight. This set of properties gives this class of materials current and future applications.

Potential topics include, but are not limited to:

1. Processing structural composites reinforced with carbon fibers
2. Processing of composites reinforced with natural fibers
3. Mechanical and thermal characterization of composites
4. Study permeability woven reinforcements
5. Study porosity in composite