

Optimization of mechanical properties of polymer composites

Assistant Professor Tetsuo Takayama

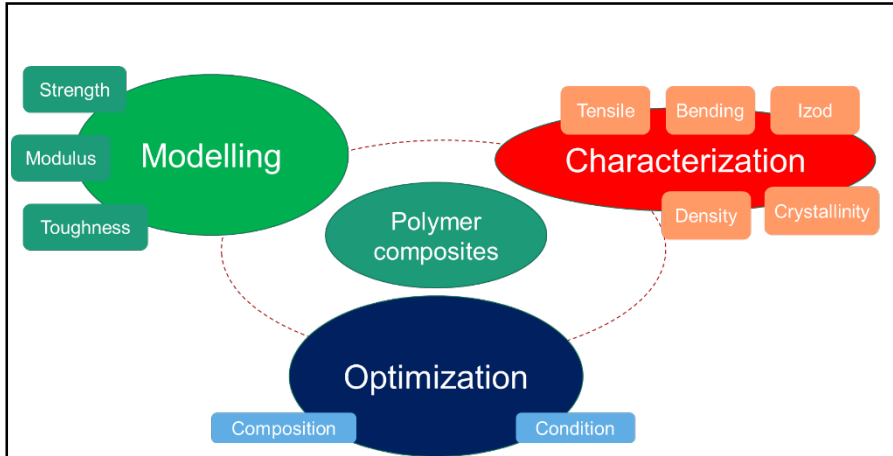


Fig.1 Research area.

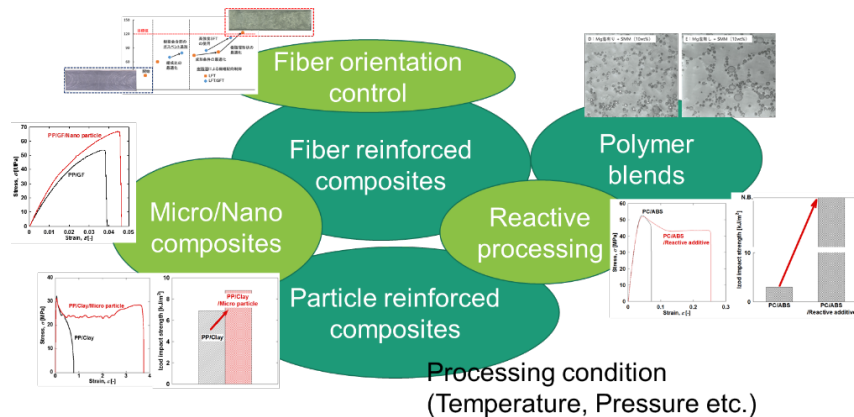


Fig.2 Examples of results.

Content:

Composite materials based on polymers typified by plastics are lighter than metallic materials and ceramics materials, and are stronger than polymer materials. Those materials are used for mechanical members used in aircrafts, automobiles, household electrical appliances, OA equipment, etc.

Our laboratory aims to make this material highly functional from the three viewpoints of "material, structure, processing".

The advanced functioning methods examined are as follows.

- (1) Micro/Nano composites
- (2) Reactive processing
- (3) Mechanical properties improvement by additive
- (4) Polymer blends
- (5) Mixing long fiber and short fiber

Appealing point:

Our laboratory have constructed several unique mechanical models for evaluate the interfacial interaction force, elastic modulus and fracture toughness of polymer.

Yamagata University Graduate School of Science and Engineering
Research Interest : Materials engineering

E-mail : : t-taka@yz.yamagata-u.ac.jp

Tel : +81-238-26-3085

Fax : +81-238-26-3085

HP : <http://composite.yz.yamagata-u.ac.jp/index.html>

