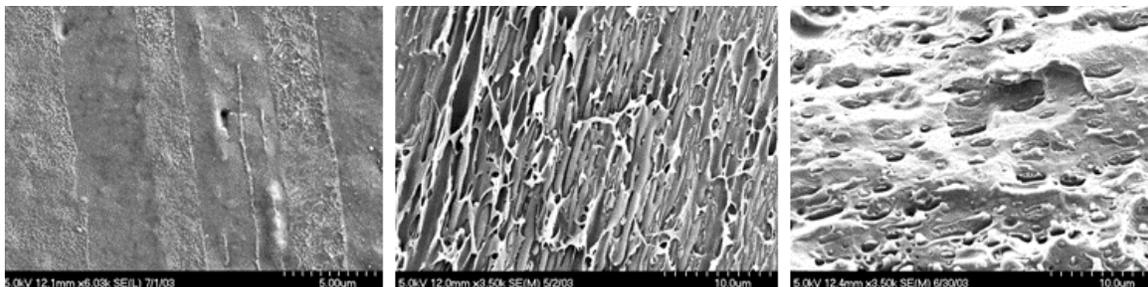


Smart Blending (Chaotic Mixing) Manufacturing

Description:

Smart blending machines make possible for the first time the deliberate and controlled formation of specific microscopic or nano-scale structures in plastics that are associated with enhanced physical properties or functionalities. Due to controlled formation, research and development can be accelerated and characteristics of products can be efficiently optimized. Smart blending machines are based on recent advances in fluid mechanics whereas current technology is rooted in early machinery that has been improved incrementally. Unlike current technology where plastic materials are mixed or extruded, plastic melts of different types are stretched and folded about one another in response to induced chaotic motions. Plastics become arranged into a layered arrangement where the number of layers are multiplied exponentially fast and can transform to a wide variety of structural types. Just as with familiar composite materials such as used in tennis rackets or fishing rods, strength and other physical properties of such plastics depend on the structural types. Consequently, smart blenders have the capability of adjusting structure to effect physical property enhancements. They have special applicability to nanotechnology and can be applied to materials other than plastics such as glasses which, like plastics, are manufactured while in a viscous, liquid condition.



Applications:

- Food Packaging
- Pharmaceutical film products
- Germ-warfare defense applications

Benefits:

- Possible production of superior plastics at reduced cost

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Protection Status: Patents issued # [6,770,340](#), # [6,902,805](#), # [7,377,684](#), # [7,514,492](#)
Licensing Status: Available for licensing
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