Equal Channel Angular Extrusion for Consolidation of Polymer Resins

Technology #j533

Ultra high molecular weight polyethylene (UHMWPE) is the material of choice for artificial joints and other bearings because of its toughness, low friction, and exceptional abrasion resistance. The present invention provides an angular extrusion (AE) method for creating monolithic polymers with high entanglement density and can be applied to polymeric materials such as UHMWPE. AE of polymers has commercial potential as a method of forming an improved bearing surface in many applications where high wear resistance is desired and high mechanical strength and ductility are necessary. Because materials processed according to the present invention maintain many of their original properties, the disclosed method can be used in the fabrication of medical replacement parts (such as replacement joints or knees) using FDA-approved materials.

This technology is claimed in the published United States Patent Application No. 13/496,411. We are seeking an industrial partner interested in its commercialization. (Ref: J533)

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