REOPECTIC MATERIALS FOR NANOFINISHING BY AFM

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Abstract: This work is an introduction in the complex field of nanofinishing with abrasive flowing materials. This is a nonconventional technology, an highly efficient ecological procedure known as Abrasive Flow Machining (AFM). The equipment is an universal tool machine which consist of two opposed cylinders to extrude the abrasive media through the passages and polish the surfaces and edges. The abrasive fluid is a reopectic medium which consists in a viscous fluid which contains several components as lubricants, emulsifier and anticorrosion agents, and an abrasive material. The nature, the viscosity, the particle size and the concentration of the abrasive material are determinant in the final results of the technology. The mixture of all these chemicals and materials allows a very large range of composition of AF samples. Many samples were prepared already at laboratory scale using ecological safe materials from the classes mentioned above and the preliminary results are promising.
Key words: Abrasive Flow Machining (AFM), Nanofinishing, Abrasive Fluid.