

DESIGN AND MANUFACTURING AN ABRASIVE FLOW MACHINING EQUIPMENT

Aurelian Vișan¹, Nicolae Ionescu¹, Valeriu Avramescu² & Gheorghe Orășanu²

¹ POLITEHNICA University of Bucharest, Manufacturing Department

² S.C. ICTCM S.A. - Mechanical Engineering and Research Institute

Corresponding author: Nicolae Ionescu, ionescu_upb@yahoo.com

Abstract: The paper presents complex Abrasive Flow Machining (AFM) equipment conceived and designed by the authors which was prepared in ICTCM. This equipment is the base for further researches in AFM fields. The AFM equipment uses two opposed cylinders and performs extrusion with semisolid abrasive media back and forth through the work piece or through passages formed by the work piece and a fixture. By repeatedly extruding the media from one cylinder to the other, an abrasive action is produced as the media enter a restrictive passage and travel through or across the work piece. In this way the work piece can be nanofinished under $Ra = 0.1 \mu\text{m}$.

Key words: Design, Manufacturing, Abrasive Flow Machining (AFM).