



“Gheorghe Asachi” Technical University of Iasi, Romania



THE BEHAVIOR OF THE FERROUS MATERIALS MAGNETIZED IN EXTREME CONDITIONS CAUSING ELECTROMAGNETIC INTERFERENCE

Vasile Dobref, Octavian Tarabuta, Nicolae Badara*

“Mircea cel Batran” Naval Academy, 1 Fulgerului Street, 900218, Constanta, Romania

Abstract

The paper proposes a method and a technology that allows the generation of a very high intensity magnetic field, at a high pressure and within an extremely short period of time into a ferrous material, in order to study the behavior of such material from the magnetic and structural perspective. The method consists in producing the “compression” of an initial magnetic flux that is generated in a coil that has inside a ferrous material cylinder (the armature), subject to testing, done by a controlled explosion, so that the magnetization of the armature takes place at very high pressure and temperature, i.e. in extreme conditions. This behavior produces different levels of failure of the communication systems and the results obtained by the authors can be used further in studies regarding protection of these.

Key words: interference, electromagnetic, environment, flux magnetic compression

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* Author to whom all correspondence should be addressed: e-mail: relpub@anmb.ro; Phone: +40-241643096