Geophysical Research Abstracts, Vol. 7, 03236, 2005
SRef-ID: 1607-7962/gra/EGU05-A-03236

Characteristics of the induced magnetization of fullerene thin films

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When some matter is exposed to effect of the exterior magnetic field, the process of the magnetize matter starts. Magnetic domains, as tides of magnetization increase volume and magnetic domains vectors are colinear to course of external magnetic field. In particle is reconstituted induced magnetization.

Experimental researches show that magnetic field of constant magnets induced by elementary electric currents/flows, which exist in magnet. According electromagnetic theory, magnetic field in some substance (fast, liquid or gas) originates owing to move of electrified particles. Atom magnetic field is superposition of spin magnetic moments, which originate owing to rotation of electrons round their axis and orbital magnetic moments, determined by rotation of electrons round of atom's nucleus. Orbital magnetic moments of next orbits are in condition of minimal energy, so the magnetization level of some particle is in function of spin moment of unpair electrons in hull with different energy levels. Tides of atom's magnetization are moments of unpair electron's spin, apropos Bor magneton μ_B.

If one react on matter/substance by external magnetic field, issues interaction between effective magnetic field and magnetic moments of orbital and spin in substance that is researched. Relation of magnetization intensity issued in matter and intensity of external field is matter susceptibility χ = J/H (J – intensity of magnetization formatted in matter; H – external magnetic field intensity). Substances/matters which have weakly

expressed susceptibility, which do not have unpair/free electrons in atom's structure, are diamgnetic. In such matters induced magnetization is "lost/deconstructed" when effect of external magnetic field stops. In distinction from those matters, at paramagnetic in atom's structure exists unpaired electrons and spin moments orientate/install in direction of effective magnetic field, and produce induced magnetization in matter. At paramagnetic, when effect of external magnetic field stops, spin magnetic moments gradually back in equilibrium and take directions which they had before of process of a magnetize of the matter.

Process of issue of induced magnetization in matter can be observed, measured or researched in rocks (hard rock's mass), in different biomaterial, ecosystems, biological systems, on objects in biosphere (bacterium's, flora, fauna, people,. . . .). Processes of form of induced magnetization also could be observed and measured on level of different nanomaterials.

In this paper are shown characteristics of induced magnetization of $C_{60.}$ fullerenes in dust and thin films in the Earth magnetic field in dark and under daily and polarization lights influence.