

Project title: Researches on the achievement of ecologic technologies based on magnetostrictively induced vibrations with a view to reduce the energy consumptions having as effect the global warming

No. of phase: 4 Accomplishment of magnetostrictive vibrator prototype

Planned objectives:

- Magnetostrictive vibrator prototype

Description of the activity:

Activity IV.1 Completion of the referential

Within this activity the prototype of magnetostrictive vibrator was accomplished in accordance with the technical execution documentation within the Stage III, activity III.2 – Designing of magnetostrictive vibrator prototype.

The magnetostrictive vibrator prototype is composed from the following main items:

- Magnetostrictive core
- Magnetizing coil assembly
- Permanent magnet
- Case of the coil
- Pre-tension spring
- Case of the vibrator
- Plate of the vibrator
- Inertial mass

The functional characteristics of the designed magnetostrictive vibrator prototype:

- The maximum force: $1kN$.
- The maximum current: $4A$.
- The maximum supply voltage: in d.c.: $24V$.
in a.c.: $100V$.
- The working frequency: $20 \div 500Hz$.
- The maximum power: $100W$ (d.c.), $500W$ (a.c.).
- The working service: continuous.
- Maximum linear displacement of the actuator (in d.c.): $0,5mm$.
- The medium over-temperature of the coil: $50^{\circ}C$.

The obtained results: Magnetostrictive vibrator prototype – 1 pc.

The stage of accomplishment of planned objective / the finalizing form (of the activity within the phase):

The planned objective was accomplished and finalized as “Magnetostrictive vibrator prototype”.