

**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”.