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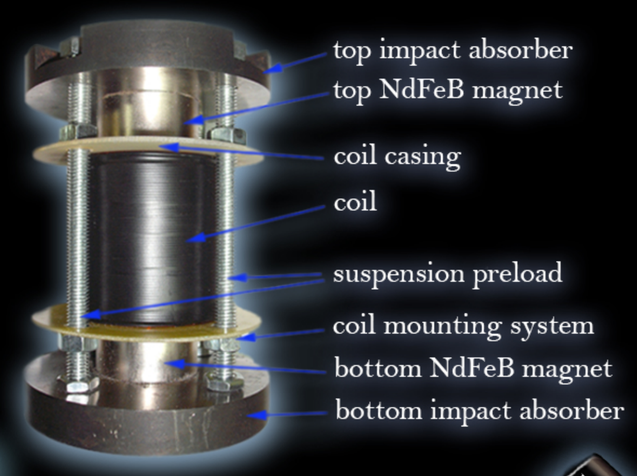
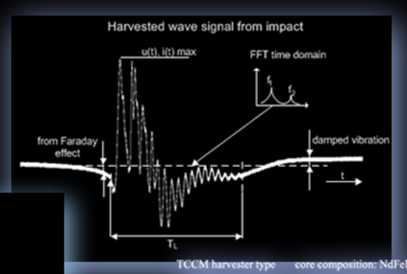
Solid-state magnetic phenomena harvesters and their power conditioners for low power applications.

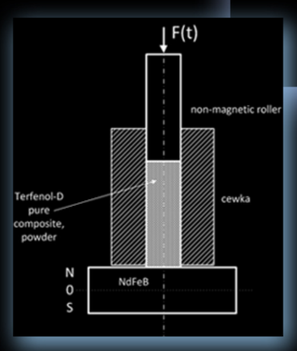
IMPACT CREATIVITY
FROM PULSE
TO
CONTINOUS SUPPLY

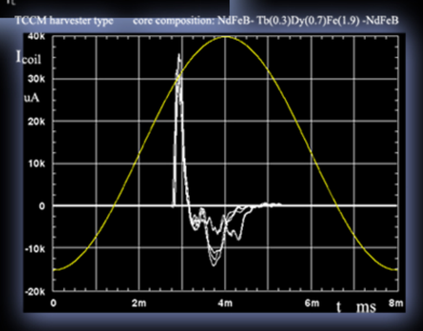
Pulse Power Harvesters

The chosen aspects of Energy Harvesting includes the unconventional method of electric power generation from mechanical shock of magnetic circuit. It is based on rare earth SMART material such as Terfenol-D co-upled with NdFeB neodymium-magnets. The material selection of the harvester device core was significant and may cause generation the current of sufficient value to operate as pulse power supply. Electric energy generation lasts only for a very short period of time, when it comes to the impulse power supply, although its current amplitude is extremely high using different forms of the Terfenol-D.









STORAGE
CREATIVITY

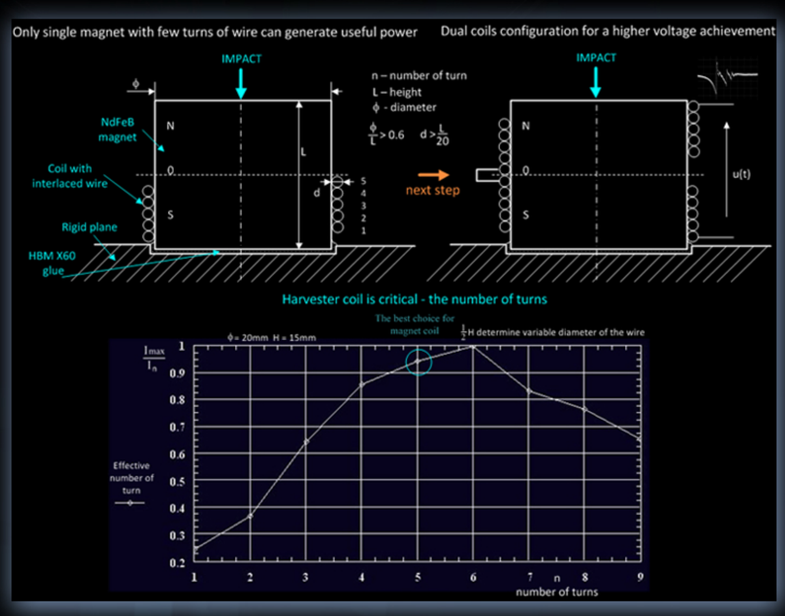
The simpliest harvester ever

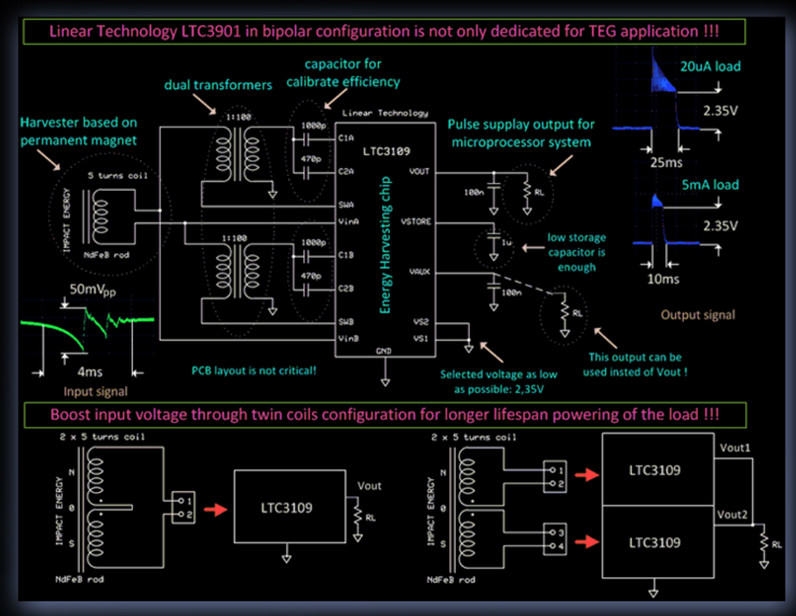
Proposed type of harvester has its origin from the FMG (FerroMagnetic Generator) group, that generate the electromagnetic wave, which occurs in the instant demagnetisation of a magnet caused by a mechanical shock, that is a result of a short force impulse. In this moment, magnet loses its magnetic properties generating strong magnetic field impulse in its surroundings. Magnets based on rare earth produce the largest amount of energy of any commercial products, even though new permanent magnet concepts restricted use of rare earth metals, they still will be able to produce enough energy.

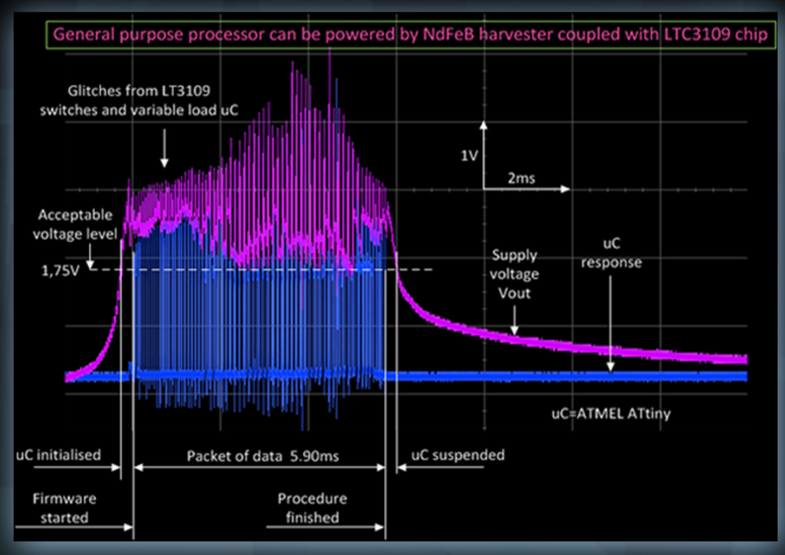
Electronic and results

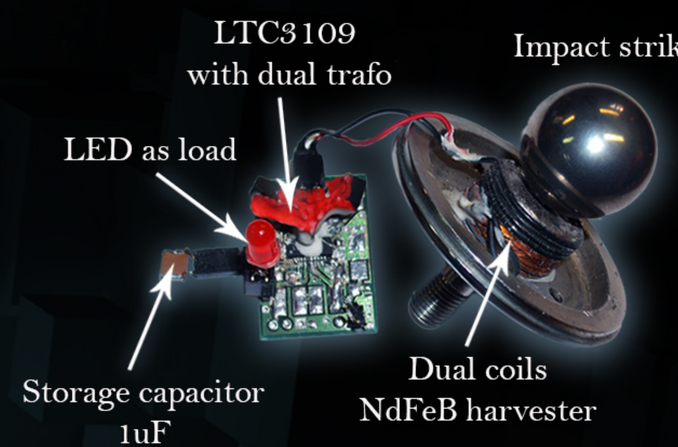
The use of a small number of turns around the magnet causes a rapid pick-changing magnetic flux strength and generate electricity, but not with enough voltage to power the microprocessor system. Use of the Linear Technology LTC3109 operating in bipolar configuration makes possible to work with low impedance magnetic circuits.

THE DOORS ARE OPEN
FOR APPLICATION









BUT

SLAM THE DOOR!!!
USE YOUR ENERGY
TO FINISH DATA
TRANSMISSION

Conclusion: Use of stored energy inside of permanent magnet by the impact is in game - in harvesting technique.