

Project ref. no: PN-III-P2-2.1-PTE-2021-0639

INERTIAL ENERGY STORAGE DEVICE FOR LOCAL ELECTRICAL MICROGRIDS PROTECTION



Acronym: DISEP

Starting date: 21.06.2022

Duration: 24 months

Call identifier: PN-III-P2-2.1-PTE-2021

Project coordinator: ICPE

About DISEP

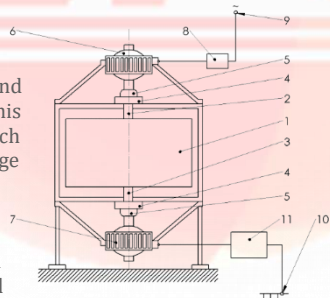
Inertial energy storage systems based on the flywheel principle, known in the literature as the "Flywheel Energy Storage System" (FESS) is gaining much attention from the scientific community due to the fact that they can be a viable solution to the problem related with the intermittent nature of energy harnessed from renewable sources. In addition, the level of technological development reached by additive manufacturing as well as the new composite materials, which have a remarkable potential in terms of energy density that can be absorbed and returned by the flywheel, all of this redefine the FESS concept, important companies at a global level investing in the research and development of these systems.

The innovative character is related to the realization of an inertial device which, in addition to the energy storage function, it permanently ensures protection from voltage peaks and against electrical parasitic elements (see the schematic diagram).

The objective of the project is the development of a prototype of an inertial device for energy storage and electromagnetic protection of the local electrical grid and the validation in relevant operating conditions of this device with additional protection capabilities and which will be able to develop a power of $P = 2\text{kW}$, the discharge time being at least $t_d = 10\text{ min}$.

The device, intended for subsequent introduction into manufacturing at the project coordinator ICPE SA whose object of activity is research and technological development, is addressed to banks, medical units, storage information, etc., powering computer equipment and technology in special laboratories, units of strategic interest, aiming at the protection and rapid storage of data.

As a result of the project, significant technological and economic effects will result and ICPE SA in this way will expand its research capability and will diversify its range of products adapted to the new performance and efficiency requirements, assimilating the R&D results of the ICPE-CA and UTCN project partners.



Project duration

24 months



3 main work packages

12 tasks related to technical work (study on the results related to the experimental model, mechanical and electromagnetic simulations, design and testing of the FESS prototype), dissemination and project management

3 Partners

- ICPE
- National Institute for Research and Development in Electrical Engineering ICPE-CA Bucharest (ICPE-CA)
- Technical University of Cluj-Napoca (UTCN)



Total budget

374.675,00 €

Project Partners



More information: <https://www.icpe.ro/disep/>

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