

کد سند: RO-S-F-28-02

تاریخ صدور: ۱۳۹۹/۱۰/۱۳

تاریخ ویرایش: ۱۳۹۹/۱۰/۱۳

معاونت پژوهشی

فرم خلاصه انگلیسی طرح/پروژه



Project Title: Future Study of Comprehensive Tests of Most Used Electrochemical Energy Storages for Iran (10 years Horizon)

Department:	Electrochemistry	Employer:	Research Assistant
Project/Program Manager:	Majid Ghahraman Afshar	Executor:	Seyed Ahmad Ahmadi
Project Financial Code:	210004	Project Quality Code:	PPCPN32
Type of Project/Program:	Quality Management in Lab	Assistant:	Research Assistant

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Project Necessity:

- 1 Starting the activity in the area of Electrochemical capacitors in the Electrochemistry and Separation Research Laboratory (ESRL)
- 2 Collaboration with ABANIROOS in order to quality control of capacitor company
- 3 Preceding a data source in the area of battery testing
- 4 Introduction on the most used capacious and battery

Object Goals:

- 1 Introducing the most used capacitors
 - ✓ Introduction on electrochemical capacitors
 - ✓ Introduction on most used battery
 - ✓ Horizon of electrochemical capacitors
- 2 Introduction on Testing electrochemical capacitors
 - ✓ Assessment parameters of electrochemical capacitors
 - ✓ Discussion on the the most used test of electrochemical capacitors
 - ✓ Introduction of novel test of electrochemical capacitors
 - ✓ Introducing the program of 10 years horizon of testing electrochemical capacitor

Abstract:

Biocompatibility and reduction of fossil resources for energy production are the challenges of today's energy, on the other hand, energy transfer and energy storage for mobile devices and areas with difficulty in energy transfer, the use of storages in order to achieve sustainable and high-quality energy has been of great importance, considering the issues raised and the necessity of awareness in this field, identifying storages and methods to investigate the quality of electrochemical storages is one of the key issues in the field of energy.

Due to the wide range of batteries and their various applications, these energy sources, from two academic and industrial perspectives, are divided into an academic view that considers the capability of battery recharge and industrial view of battery usage type. According to forecasts, lithium batteries will be replaced in the future due to their high application and performance and will be introduced and supplied as new batteries.

Requires optimal battery performance, low production cost, etc. The use of suitable tests for batteries has doubled the importance that according to the studies, the classification of tests is done in four categories from the preparation of raw materials to the industrial scale, each of which includes different tests according to the definition of different tests. Due to the current situation and lack of available facilities, a number of tests will have a higher priority, which will be applicable according to the type of application considered for the battery. In the performance tests, capacity determination and ohmic measurement, in the aging tests, cycle life and in the safety/abuse tests section are also more important depending on the type of prediction for the usage of the tests.

Steps and Methodologies:

- 1 Introduction on the most used electrochemical capacitors
- 2 Introduction on the most used testing of electrochemical capacitors

Main Results (technical outputs, patents, papers, books, reports, etc.):

- 3 The handbook of the most used electrochemical capacitors
- 4 The hand book of the most used testing of electrochemical capacitors