

## INTEGRATION OF BATTERY ENERGY STORAGE SYSTEMS IN SMART ELECTRICAL MICRO-GRIDS

BY

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**Abstract.** A survey of the two main structures of power electronics converters that are used for integrating battery energy storage systems (BESS) in autonomous smart micro-grids (MG) with renewable energy sources (RES) is proposed. Beside the hardware analysis, a short review of the control solutions for BESS is performed. One of the BESS configurations is evaluated by experimental results, and starting from these, the paper suggests a solution for improving the BESS on the battery side.

**Key words:** micro-grid; renewable energy sources; energy storage; frequency control.