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(54) **NITRIDE-BASED BIDIRECTIONAL SWITCHING DEVICE FOR BATTERY MANAGEMENT AND METHOD FOR MANUFACTURING THE SAME**

(71) Applicant: **INNOSCIENCE (SUZHOU) SEMICONDUCTOR CO., LTD.**, Suzhou City (CN)

(72) Inventors: **Qiyue ZHAO**, Suzhou City (CN); **Wuhao GAO**, Suzhou City (CN); **Baoli WEI**, Suzhou City (CN)

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(57) **ABSTRACT**

A nitride-based bidirectional switching device is provided for working with a battery protection controller having a power input terminal, a discharge over-current protection (DO) terminal, a charge over-current protection (CO) terminal, a voltage monitoring (VM) terminal and a ground terminal. The nitride-based bidirectional switching device comprises a nitride-based bidirectional switching element and an adaption module configured for receiving a DO signal and a CO signal from the battery protection controller and generating a main control signal for controlling the bidirectional switching element. By implementing the adaption circuit, the nitride-based bidirectional switching element can work with conventional battery protection controller for battery charging and discharging management. Therefore, a nitride-based battery management system can be realized with higher operation frequency as well as a more compact size.