

**Title:**

Low Harmonics Plug-in Home Charging Electric Vehicle Battery Charger Utilizing Multi-level Rectifier, Zero Crossing, and Buck Chopper: BMS Battery Charging Control Algorithm

**Journal:**

Advanced Structures Materials, Volume 148, 2021

**Document Type:**

Book Chapter

**Authors:**

Arof S.,  
Sazali M.S.,  
Noor N.M.,  
Nur Amirah J.,  
Mawby P.,  
Noorsal E.,  
Bakar A.A.,  
Ali Y.M.

**Full text link:**

<https://www.springerprofessional.de/en/low-harmonics-plug-in-home-charging-electric-vehicle-battery-cha/19151330>

**Scopus preview**

[https://www.scopus.com/inward/record.uri?eid=2-s2.0-85105651899&doi=10.1007%2f978-3-030-67750-3\\_18&partnerID=40&md5=6cd3dbbe5b0181e439239593b8b6a497](https://www.scopus.com/inward/record.uri?eid=2-s2.0-85105651899&doi=10.1007%2f978-3-030-67750-3_18&partnerID=40&md5=6cd3dbbe5b0181e439239593b8b6a497)

**Citation:**

Arof S., Sazali M.S., Noor N.M., Nur Amirah J., Mawby P., Noorsal E., Bakar A.A., Ali Y.M.  
Low Harmonics Plug-in Home Charging Electric Vehicle Battery Charger Utilizing Multi-level Rectifier, Zero Crossing, and Buck Chopper: BMS Battery Charging Control Algorithm  
(2021) Advanced Structured Materials, 148, pp. 211 - 222,  
DOI: 10.1007/978-3-030-67750-3\_18

**Abstract:**

This paper focuses on a series motor direct current (DC) drive electric car (EC) battery charger control algorithm for controlling and synchronizing Low Harmonics Plug-in Home Charging Electric Vehicle Battery Charger that consists of zero crossing, multi-level rectifier (MLR), and buck chopper (BC). The MATLAB/Simulink software was used to test the control algorithm and proposed battery charger. The simulation results showed that the proposed battery charger control algorithm successfully performed the expected operation.