



# AIUB DSpace Publication Details

<b>Title:</b>	Design and Simulation DFIM Driven Electrical Vehicles Based on IP Controller
<b>Author(s) Name:</b>	Al-Mayhedee Zubair, Mohammad Abdul Mannan, and Junji Tamura
<b>Contact Email(s):</b>	mdmannan@aiub.edu
<b>Published Journal Name:</b>	AIUB Journal of Science and Engineering (AJSE)
<b>Type of Publication:</b>	Journal
<b>Volume:</b>	17 Issue 2
<b>Publisher:</b>	American International University-Bangladesh (AIUB)
<b>Publication Date:</b>	July 2018
<b>ISSN:</b>	1608 – 3679
<b>DOI:</b>	<a href="https://doi.org/10.53799/ajse.v17i2.8">https://doi.org/10.53799/ajse.v17i2.8</a>
<b>URL:</b>	<a href="https://ajse.aiub.edu/index.php/ajse/article/view/8">https://ajse.aiub.edu/index.php/ajse/article/view/8</a>
<b>Other Related Info.:</b>	Page 43-50

**Citation:** Al-Mayhedee Zubair, Mohammad Abdul Mannan, and Junji Tamura, “Design and Simulation DFIM Driven Electrical Vehicles Based on IP Controller,” AIUB Journal of Science and Engineering (AJSE), Vol. 17, Issue 2, pp. 43-50, 2018.



## AIUB DSpace Publication Details

### Abstract:

The environment friendly blessings of Electrical Vehicles (EV), human beings are becoming extra involved in the use of them alternatively than the usage of mechanical differentials. In electrical vehicles distinct sorts of electrical machines are used among them DFIM is used in this work. The challenging work is to design of a controller as the output of the motor has to match with vehicle input. So, far, most of the mentioned works have utilized Proportional-Integral (PI) controllers as the speed control. But, the negative aspects of PI controller are properly known, as its design depends on the specific motor parameters and the overall performance is sensitive to system disturbances. The fundamental goal of this paper is to replace the conventional PI controller by means of an IP controller which is successful of dealing with exceedingly non-linear DFIM motor for high performance application in Electrical Vehicle. The effectiveness of designed IP controller of an electrical differential for an EV system is evaluated through Matlab/Simulink software. In simulation work different road conditions for EV are considered. After the simulation the designed controller is found to be strong for the speed control application of Electrical Vehicle.

**Keywords:** Electrical Vehicle, Doubly Fed Induction Motor, FOC, IP Controller, PI Controller