



# AIUB DSpace Publication Details

Title	Induction Motor Bearing Fault Classification Using Extreme Learning Machine Based on Power Features		
Author(s) Name	Niloy Sikder, Abu Shamim Mohammad Arif, M. M. Manjurul Islam, Abdullah-Al Nahid		
Contact Email(s)	nahid.ece.ku@ku.ac.bd; manjurul@aiub.edu		
Published Journal Name	Arabian Journal for Science and Engineering		
Type of Publication	Journal		
Volume	46	Issue	1
Publisher	Springer Nature		
Publication Date	Mar 24, 2021		
ISSN	2191-4281		
DOI	<a href="https://doi.org/10.1007/s13369-021-05527-5">https://doi.org/10.1007/s13369-021-05527-5</a>		
URL	<a href="https://link.springer.com/article/10.1007%2Fs13369-021-05527-5">https://link.springer.com/article/10.1007%2Fs13369-021-05527-5</a>		
Other Related Info.	Pages 8475–8491		





## Abstract

Electric motors perform the crucial task of converting electrical energy into essential mechanical energy on demand. Motors are plentifully used in the industrial sector all over the world to drive mechanical appliances. Despite being robust and sturdy, motors are not entirely fault-proof, and faults that are caused by the bearings trouble them the most. Early detection of these faults allows engineers to take preventive measures and avert hard breakdowns. Numerous studies have been conducted in this area of research. Many methods have been proposed and implemented to detect the existence and determine the type of fault present in an induction motor. However, this field of research is still open since there is room for improvements in the claimed results. In this paper, a novel fault diagnosis method has been proposed involving an emerging machine learning technique named extreme learning machine to identify the existence of flaws in motor bearings and specify their origins. The described method is tested on a benchmark bearing fault dataset provided by Case Western Reserve University Bearing Data Center. The acquired result yields a maximum classification accuracy of 99.86% and an average classification accuracy of 98.67% after being tested on multiple fault datasets.

