(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :04/05/2024

(21) Application No.202441035598 A
(43) Publication Date : 17/05/2024

(54) Title of the invention : UNIQUE MAGNETIC NATURAL FIBER COMPOSITES FOR ENERGY HARVESTING APPLICATIONS

(51) International classification	:H02N0002180000, H01L0041113000, H01L0041180000, G01M0005000000, H01L0041193000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Dr.M.Thiyagu
Address of Applicant :Assistant Professor (SG), Department of Mechanical Engineering, Saveetha School of Engineering, Saveetha Institute of Medical and Technical Sciences, Chennai- 602105 ----------- -----------
2)Dr.Yagya Dutta Dwivedi
3)Dr. Syed Saleem Pasha
4)Mr. A S M Udayakumar
5)Mr.Ramanaji Koneti
6)Mr. S.Chitharthan
7)Mr. M. C. Anand Chakaravarthi
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr.M.Thiyagu
Address of Applicant :Assistant Professor (SG), Department of Mechanical Engineering, Saveetha School of Engineering, Saveetha Institute of Medical and Technical Sciences, Chennai- 602105 ----------- -----------
2)Dr.Yagya Dutta Dwivedi
Address of Applicant :Associate Professor, Department of Aeronautical Engineering, Institute of Aeronautical Engineering, Dundigal, Hyderabad- 500043 ----------- -----------
3)Dr. Syed Saleem Pasha
Address of Applicant :Associate Professor, Department of Mechanical Engineering, Ghousia College of Engineering, Ramanagaram-562159, Karnataka -- --------- -----------
4)Mr. A S M Udayakumar
Address of Applicant :Assistant Professor, Department of Mechanical Engineering, St.Joseph's College of Engineering, OMR, Semmenchery, Chennai - 600119 ------- ---- -----------
5)Mr.Ramanaji Koneti
Address of Applicant :Assistant Professor, Department of Mechanical Engineering, University College of Engineering Kakinada (Autonomous), Jawaharlal Nehru Technological University, Kakinada -533003 ----------- -----------
6)Mr. S.Chitharthan
Address of Applicant :Assistant Professor, Department of Mechanical Engineering, Karpagam College of Engineering, Coimbatore -641032 ----------- -----------
7)Mr. M. C. Anand Chakaravarthi
Address of Applicant :Assistant Professor, Department of Mechanical Engineering, Sri Sai Ram Engineering College, West Tambaram, Chennai – 600044 ----------- --- --------

(57) Abstract :
The present invention discloses a novel composite material composed of natural fibers embedded with magnetic nanoparticles for energy harvesting applications. This composite material combines the inherent piezoelectric properties of natural fibers with the magnetic properties of nanoparticles to efficiently convert mechanical energy from various sources, such as vibrations, movements, and mechanical stress, into electrical energy. The incorporation of magnetic nanoparticles enhances the piezoelectric effect in natural fibers, resulting in improved energy conversion efficiency. The composite material can be tailored for specific applications in fields such as wearable electronics, structural health monitoring, and renewable energy generation, offering a sustainable and versatile solution for self-powered systems.
Accompanied Drawing [FIGS. 1-2]

No. of Pages : 22 No. of Claims : 10