Patent Search

Invention Title	MHD POROUS DYNAMICS: HARNESSING MAGNETO HYDRODYNAMICS AND POROUS MEDIA FOR ENHANCED FLUID FLOW CONTROL
Publication Number	22/2024
Publication Date	31/05/2024
Publication Type	INA
Application Number	202441040846
Application Filing Date	26/05/2024
Priority Number	
Priority Country	
Priority Date	
Field Of Invention	ELECTRONICS
Classification (IPC)	H01L0023473000, G06F0009500000, H01L0023380000, B01J0008020000, G06F0001200000

Inventor

Name	Address	Country	Nat
Dr. Manjula M. Hanchinal	Associate Professor & Head, Dept. of Mathematics, Smt. I. S. Yadwad Govt. First Grade College, Ramdurg, Belagavi, Karnataka, India, Pincode: 591123	India	Indi
Dr. R. Balapriya	Professor, Division of Mathematics, Saveetha School of Engineering, Saveetha Institute of Medical and Technical Sciences, (SIMATS University), Thandalam, Chennai, Tamilnadu, India, Pincode: 602105	India	Indi
Dr. Nellore Manoj Kumar	Independent Researcher, Founder & CEO, Infinite-Research Organization, B.O, 15-225, Gollapalem, Venkatagiri, Tirupati District, Andhra Pradesh, India, Pincode: 524132	India	Indi
Dr. P. Naga Lakshmi Devi	Assistant Professor, Department of Mathematics, Institute of Aeronautical Engineering (A), Hyderabad, Telangana, India, Pincode: 500043	India	Indi
Dr. Vijaya Lakshmi Kunche	Assistant Professor, Department of Mathematics, DVR & Dr. HS MIC College of Technology, Kanchikacherla, N.T.R District, Andhra Pradesh, India, Pincode: 521180	India	Indi
Dr. G. Mirona	Assistant Professor in Mathematics, Malla Reddy Engineering College for Women, Maisammaguda, Dhulapally, Secunderabad, Telangana, India, Pincode: 500100	India	Indi

Applicant

Name	Address	Country	Nat
Dr. Manjula M. Hanchinal	Associate Professor & Head, Dept. of Mathematics, Smt. I. S. Yadwad Govt. First Grade College, Ramdurg, Belagavi, Karnataka, India, Pincode: 591123	India	Indi
Dr. R. Balapriya	Professor, Division of Mathematics, Saveetha School of Engineering, Saveetha Institute of Medical and Technical Sciences, (SIMATS University), Thandalam, Chennai, Tamilnadu, India, Pincode: 602105	India	Indi
Dr. Nellore Manoj Kumar	Independent Researcher, Founder & CEO, Infinite-Research Organization, B.O, 15-225, Gollapalem, Venkatagiri, Tirupati District, Andhra Pradesh, India, Pincode: 524132	India	Indi
Dr. P. Naga Lakshmi Devi	Assistant Professor, Department of Mathematics, Institute of Aeronautical Engineering (A), Hyderabad, Telangana, India, Pincode: 500043	India	Indi
Dr. Vijaya Lakshmi Kunche	Assistant Professor, Department of Mathematics, DVR & Dr. HS MIC College of Technology, Kanchikacherla, N.T.R District, Andhra Pradesh, India, Pincode: 521180	India	Indi
Dr. G. Mirona	Assistant Professor in Mathematics, Malla Reddy Engineering College for Women, Maisammaguda, Dhulapally, Secunderabad, Telangana, India, Pincode: 500100	India	Indi

Abstract:

The invention integrates magnetohydrodynamics (MHD) with porous media to enhance fluid flow control. This system uses a magnetic field to manipulate electrically conc fluids through a porous medium, improving efficiency in applications like cooling, filtration, and chemical reactors. The porous medium optimizes fluid distribution and he transfer, while the adjustable magnetic field provides precise control over flow direction and velocity. Applications include electronic cooling systems, where enhanced coo flow improves heat dissipation, and filtration systems, where clogging is minimized. In chemical reactors, the system enhances reactant mixing and reaction rates. This inn integration promises significant advancements in fluid dynamics, offering more efficient and sustainable solutions across various industries.

Complete Specification

Description:The present invention relates to the field of fluid dynamics, specifically focusing on the innovative integration of magnetohydrodynamics (MHD) and porous media to achieve enhanced control and manipulation of fluid flow. This novel approach leverages the principles of MHD to influence and direct the movement of electric conductive fluids through porous structures, enabling more efficient and precise management of fluid dynamics in various industrial and engineering applications. The invention encompasses the design, development, and application of systems that utilize magnetic fields in conjunction with porous materials to optimize fluid flow, enha heat transfer, and improve overall system performance. Potential applications include, but are not limited to, advanced cooling systems, filtration processes, and chemic reactors, where precise fluid control is critical. This invention aims to address current limitations in fluid management technologies by providing a robust and versatile solution that combines the advantages of MHD and porous media.

Background of the proposed invention:

Fluid dynamics is a cornerstone of many industrial and scientific processes, from chemical engineering to environmental management. Traditional methods of controllin fluid flow often rely on mechanical components and pressure gradients, which can be limited in efficiency and precision. In recent years, there has been a growing intere in harnessing the unique properties of magnetohydrodynamics (MHD) and porous media to develop more sophisticated methods for managing fluid flow.

Magnetohydrodynamics refers to the study of the behavior of electrically conductive fluids in the presence of magnetic fields. These fluids, which include plasmas, liquid metals, and saltwater solutions, can be manipulated using magnetic forces, allowing for non-contact control of their motion. This principle has been employed in various applications, such as in MHD generators, where the motion of a conductive fluid in a magnetic field is used to generate electricity, and in propulsion systems, where magnetic fields are used to drive the fluid without moving parts.

View Application Status

Terms & conditions (http://ipindia.gov.in/terms-conditions.htm) Privacy Policy (http://ipindia.gov.in/privacy-policy.htm)
Copyright (http://ipindia.gov.in/copyright.htm) Hyperlinking Policy (http://ipindia.gov.in/hyperlinking-policy.htm)
Accessibility (http://ipindia.gov.in/accessibility.htm) Archive (http://ipindia.gov.in/archive.htm) Contact Us (http://ipindia.gov.in/contact-us.htm)
Help (http://ipindia.gov.in/help.htm)

Content Owned, updated and maintained by Intellectual Property India, All Rights Reserved.

Page last updated on: 26/06/2019