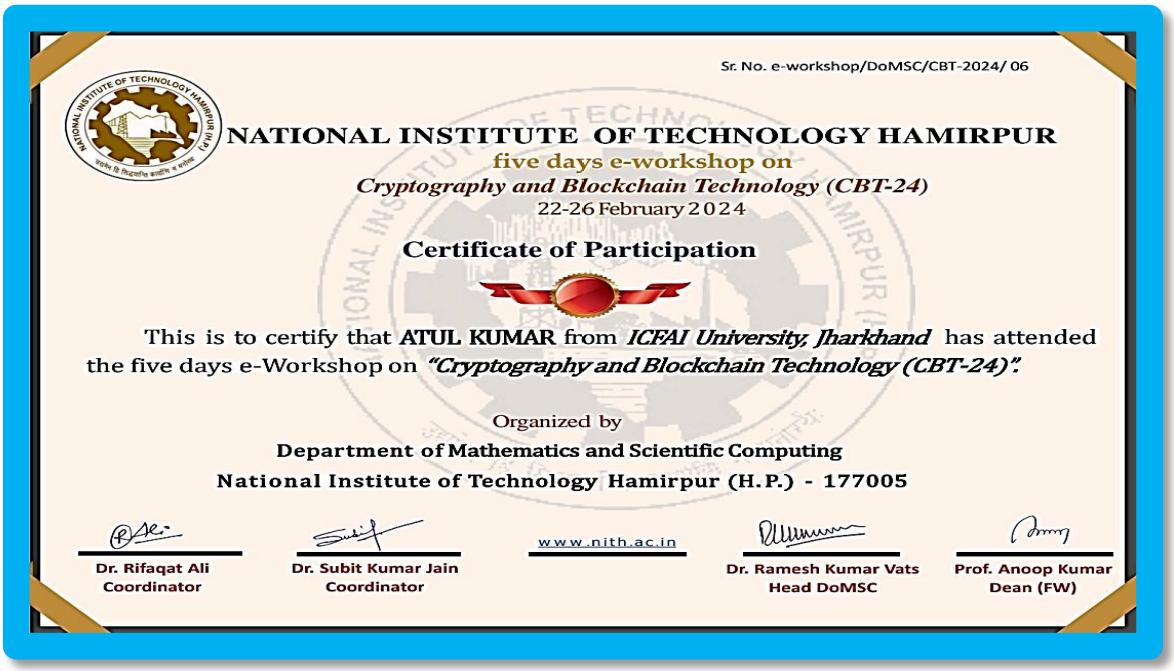
Achievements of Faculties and Students

Congratulation to all faculties for their achievements



Sr. No. e-workshop/DoMSC/CBT-2024/ 06

NATIONAL INSTITUTE OF TECHNOLOGY HAMIRPUR

five days e-workshop on

Cryptography and Blockchain Technology (CBT-24)

22-26 February 2024

Certificate of Participation

This is to certify that **ATUL KUMAR** from ***ICFAI University, Jharkhand*** has attended the five days e-Workshop on ***"Cryptography and Blockchain Technology (CBT-24)".***

Organized by

Department of Mathematics and Scientific Computing

National Institute of Technology Hamirpur (H.P.) - 177005

Dr. Rifaqat Ali
Coordinator

Dr. Subit Kumar Jain
Coordinator

www.nith.ac.in

Dr. Ramesh Kumar Vats
Head DoMSC

Prof. Anoop Kumar
Dean (FW)

SARALA BIRLA UNIVERSITY

NATIONAL CONFERENCE

16th - 17th February, 2024

Certificate of Participation

This is to certify that

This is to certify that Prof./Dr./Mr./Ms. ATUL KUMAR of SARALA BIRLA UNIVERSITY, RANCHI participated/presented paper titled Quantum Blockchain Concept in IoMT in the National Conference on "**Recent Advances in Quantum Science & Technology (NCRAQST -2024)**" Organized by Faculty of Applied Sciences, Sarala Birla University, Ranchi, from February16-17, 2024.

Dr. Pankaj K. Goswami
Dean, Faculty of Engineering & Applied Sciences

Prof. (Dr.) Gopal Pathak
Vice Chancellor

GOKUL GLOBAL UNIVERSITY

CERTIFICATE
OF PARTICIPATION

DR. MITHILESH KUMAR PANDEY

From FACULTY OF LAW ,THE ICFAI UNIVERSITY, JHARKHAND

Participated in the One week Online National Level Faculty Development Program on
" **LEADERSHIP ODYSSEY: NAVIGATING THE FUTURE IN BANI WORLD** "
which was organized by Career Development Cell (CDC), Gokul Global University, Siddhpur, Gujarat
from 28 February to 5 March 2024.

MR. MANOJ PATEL
CO-ORDINATOR,
DIRECTOR, CDC

PROF. (DR.) HIMMATSINH RAJPUT
REGISTRAR,
GGU, SIDDHPUR

सत्यमेव जयते
Government of India

MALAVIYA MISSION
TEACHER
TRAINING PROGRAMME

ज्ञान-विज्ञान विमुक्तये
University Grants Commission

CERTIFICATE OF PARTICIPATION

NEP 2020 Orientation & Sensitization Programme

This is to certify that **Dr. Shovona Choudhury** from **Institute of Chartered Financial Ayalysts of India University, Ranchi** has completed the NEP 2020 Orientation & Sensitization Programme under Malaviya Mission Teacher Training Programme (MM-TTP) of University Grants Commission (UGC) Organized by **Indian Institute of Technology (Indian School of Mines), Dhanbad** from 02-03-2024 to 15-03-2024

Prof. Mrinalini Pandey
Coordinator IIT (ISM) Dhanbad

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CERTIFICATE
of participation

is presented to

ATUL KUMAR

Department of Computer Science and Engineering, The ICFAI University, Jharkhand, Ranchi, for successfully participating in the **National Research Workshop** on **"Writing Research Papers and Responding to Reviewers' Comments"**, held on 28th April, 2024, organized by MBien Analytica and Systems in association with Adonic Informatics through virtual mode.

R. Dasgupta
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Dr. A. Agarwal
COORDINATOR
(TRAINING AND WORKSHOP)
Adonic Informatics

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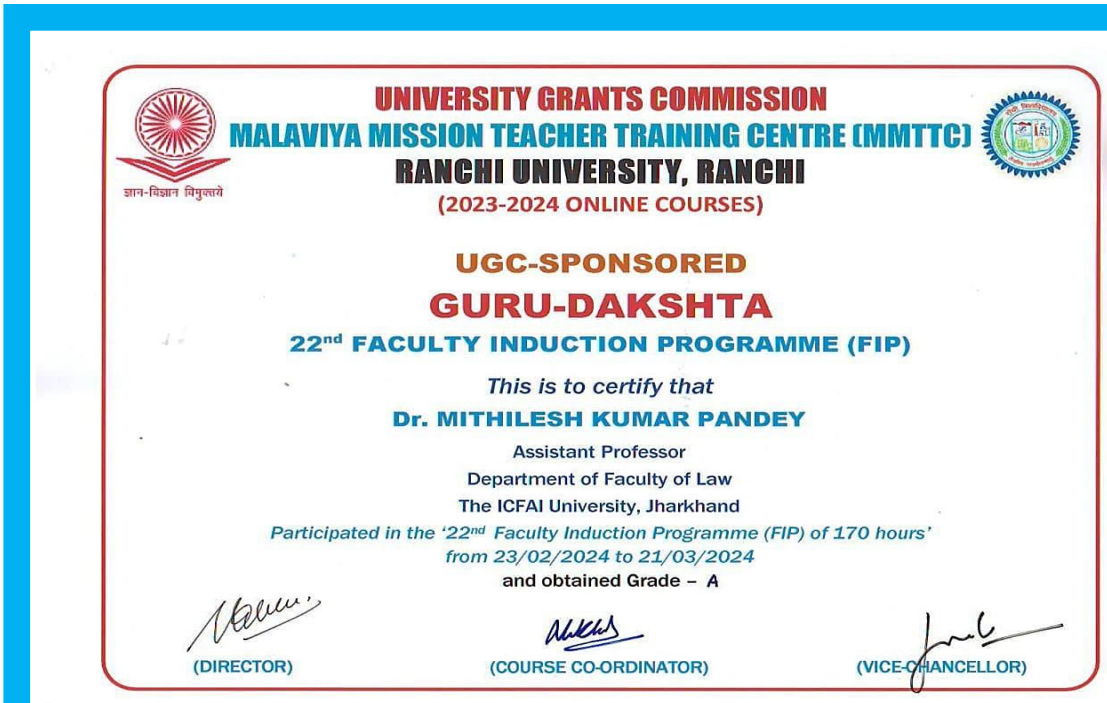

ज्ञान-विज्ञान विमुक्तये

UNIVERSITY GRANTS COMMISSION
MALAVIYA MISSION TEACHER TRAINING CENTRE (MMTTC)
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(2023-2024 ONLINE COURSES)

UGC-SPONSORED
GURU-DAKSHTA
22nd FACULTY INDUCTION PROGRAMME (FIP)

This is to certify that

Dr. MITHILESH KUMAR PANDEY

Assistant Professor
Department of Faculty of Law
The ICFAI University, Jharkhand

Participated in the '22nd Faculty Induction Programme (FIP) of 170 hours' from 23/02/2024 to 21/03/2024

and obtained Grade – A

(DIRECTOR) (COURSE CO-ORDINATOR) (VICE-CHANCELLOR)

(ISBN :978-93-340-29-37-6)

"FROM MANUSCRIPT TO METADATA: EXPLORING DIGITAL TOOLS FOR LITERARY RESEARCH"

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Introduction

The confluence of conventional manuscript studies with digital approaches has foreshadowed a transformational era in literary research. This chapter begins with an examination of the wide range of digital resources available to academics, enabling them to investigate manuscripts, generate information, and shed light on novel aspects of literary studies. Through the seamless integration of digital resources with tangible artifacts, scholars can more deeply comprehend literary works and navigate complex textual landscapes.

In the realm of literary research, the convergence of traditional manuscript studies with digital methodologies has heralded a transformative era. This chapter embarks on an exploration of the expansive array of digital tools that empower scholars to delve into manuscripts, create metadata, and illuminate new dimensions within literary studies. By seamlessly integrating material artifacts with digital resources, researchers can navigate intricate textual landscapes and deepen our comprehension of literary works.

The transition from traditional manuscript studies to digital approaches represents a pivotal shift in how scholars engage with literary materials. Historically, manuscript studies relied on physical access to rare documents, often limited by geographical constraints and the delicate nature of archival materials. However, with the advent of digital technologies, this paradigm has undergone a profound evolution. Digital tools now offer unprecedented opportunities for scholars to access, analyze, and interpret manuscripts with greater precision and efficiency.

At the heart of this transformation lies the concept of metadata generation. Metadata, in the context of literary research, refers to structured information that describes the content, context, and characteristics of manuscripts. By systematically encoding metadata, scholars can enhance the discoverability and

International Journal of Research Publication and Reviews, Vol 5, no 1, pp 4844-4849 January 2024

WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

Experimental Analysis of Generation of Hydrogen of Waste Mines Water: An Alternative Source of Energy

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ABSTRACT

Introducing green hydrogen from renewable sources and storing it for a sustainable future will help them become self-sufficient in the energy sector and reduce the emission greenhouse gases. Fuel cells, electrolyzers, and renewable energy sources are used in a cost-effective manner to manufacture hydrogen compared to existing diesel power generation. This cost comparison illustrates the importance of renewable energy sources for a sustainable future when compared to diesel for the next 20 years. As a result, we identify the best suitable location when waste water is readily available and power requirements are high to operate the machinery. In mining industries, the availability of waste water and required more energy to operate the heavy earth moving machinery (HEMM) are the most suitable place for the generation of hydrogen. While HEMM is used to extract minerals from the earth crust, the machinery consumes fuel that increases carbon emissions, which have an adverse effect on the environment. In addition, the demand for fossil fuels has increased due to geopolitics, and the depletion levels of fossil fuels have led to consideration of alternative fuel sources. In this article an experimental analysis was performed to produce hydrogen from mine water. By electrolysis process and by using aluminium foil and sodium hydroxide factors like temperature, pH value, chemical like sodium hydroxide, and aluminium foil. A study concludes that aluminium foil and sodium hydroxide can provide a low-cost, low-energy hydrogen production solution by using aluminium foil and sodium hydroxide. The results of this research can contribute to the development of a sustainable and clean energy system, reducing the dependence on fossil fuels and mitigating the environmental impact of energy production.

Keywords: Carbon emissions, Fossil fuels, Hydrogen, Mine water, Electrolysis

1. Introduction

The energy demand continuously increasing and the majority of nations rely on fossil fuel-based processes, which are inefficient and harmful to the environment [1]. Over the twentieth century, sea level rise has roughly tripled due to global warming of 0.8°C [2]. Climate change is primarily caused by the rise in greenhouse gases. Several countries, especially island areas, are suffering a lot due to sea level rise all over the world [1, 2]. In order to meet these demands, alternative, sustainable and clean energy sources like solar, wind, hydraulic, and green hydrogen are becoming more and more popular. [3]. In this context, hydrogen energy, which is considered a future energy source that plays a key role to reduce greenhouse gases emissions and energy storage problems significantly [4]. Moreover, hydrogen is an abundant element on earth, in pure form, and has the highest specific energy of any conventional fuel. Additionally, hydrogen has the advantage of being produced from a variety of primary energy sources, including solar, wind, biomass, coal, and nuclear energy [3]. India complies with Paris agreement to reduce its emissions by net zero by 2070, and increasing the GDP emissions intensity by 33-35% by 2030 compared to 2005 levels [2]. It is not feasible without decarburization of mining sector. The electrical energy is alternative fuel source which needs lithium and cobalt mineral resources for manufacturing of electrical batteries for mobile equipment like dumper, truck. The limitations of batteries emit the carbon limited power and increase the weight of the machinery [3]. Hence the hydrogen is a best alternative to minimize the emission of carbon in mines. The national hydrogen mission has been launched by union cabinet on 4th January 2021 [4]. In order to produce green hydrogen in the future, businesses like Reliance Ltd, Adani Group, Larsen & Turbo Ltd, and state-run firms like Indian Oil Corporations Ltd, NTPC Ltd, and GAIL India Ltd have been developing plans. According to a report by the IEA, 306 million tons of green hydrogen produced from renewable energy will be needed annually to achieve net-zero global emissions by 2050 [5].

A number of different methods can be used to produce hydrogen energy, which can be used as a gas or a liquid, converted into electricity, and used as fuel [6]. Rosenbad and Gany (2010), increasing the amount of hydrogen gas from the water by using aluminium powder and by the size of the particle of aluminium the amount of generation of hydrogen is varied [7]. The reaction starts instantaneously at the room temperature and an experimental installation is used for the measurement of hydrogen by aluminium water reaction and which result in the 100% yield of hydrogen generation and the reaction are independent of the type of water [1]. Kumar et al. (2012) experimental setup was utilizes the chemical reaction between aluminium and water to produce hydrogen by improved using 149-µm aluminium powder [4]. Zhuang et al. (2012) used aluminium, sodium hydroxide, sodium stannate solid mixture