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# Criterion 3: Research, Innovations and Extension

**Key Indicator 3.3- Research Publication and Awards** 

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# **Response:**

- 1. Cover page,
- 2. The first page of the chosen- publication
- 3. Web link of Journal/book



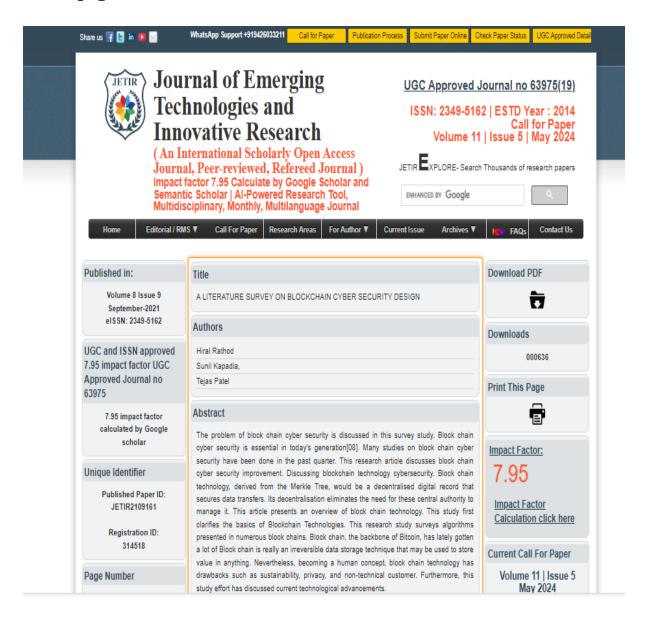


# [1] **Title Name:** A LITERATURE SURVEY ON BLOCKCHAIN CYBER SECURITY DESIGN

~ By Tejas Patel

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# JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)

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# A LITERATURE SURVEY ON BLOCKCHAIN CYBER SECURITY DESIGN

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Abstract: The problem of block chain cyber security is discussed in this survey study. Block chain cyber security is essential in today's generation[08]. Many studies on block chain cyber security have been done in the past quarter. This research article discusses block chain cyber security improvement. Discussing blockchain technology cybersecurity. Block chain technology, derived from the Merkle Tree, would be a decentralised digital record that secures data transfers. Its decentralisation eliminates the need for these central authority to manage it. This article presents an overview of block chain technology. This study first clarifies the basics of Blockchain Technologies. This research study surveys algorithms presented in numerous block chains. Block chain, the backbone of Bitcoin, has lately gotten a lot of Block chain is really an irreversible data storage technique that may be used to store value in anything. Nevertheless, becoming a human concept, block chain technology has drawbacks such as sustainability, privacy, and non-technical customer. Furthermore, this study effort has discussed current technological

Cyber Threat Intelligence (CTI), Distributed Ledger Technology (DLT), Directed Acyclic Graph (DAG), Index Terms -Cyber Security Information Exchange (CYBEX),etc.

In many approaches, block chain technology addresses the problems of security and privacy. To begin, new blocks are always kept in a linear as well as chronological order. That is, they are always appended to the block chain's "terminus." Whenever users examine at the Bitcoin blockchain network, you'll see that each block has a location upon on chain known as a "altitude." This block's height has achieved 656,197 units as of November 2020 [11].

It's also very hard to return and modify the content of a block until it has been put to the end of the block chain unless such majority of people agree to do so. This is due to the fact that each block includes its own hash, as well as the hash of the block before it and the previously stated time stamp. If that information is edited in any way, the hash code changes as well Here's why that's important to security



Fig 1. Block chain technology accounts [30].

Let's say a hacker wants to alter the block chain and steal Bitcoin from everyone else. If they were to alter their own single copy, it would no longer align with everyone else's copy. When everyone else cross-references their copies against each other, they

would see this one copy stand out and that hacker's version of the chain would be cast away as illegitimate.

It is almost hard to counter with such a hack, since the hacker would need to both possess and modify 51% of the block chain copies simultaneously in order for their new copy into becoming the majority copy, which means that the agreed-upon chain would

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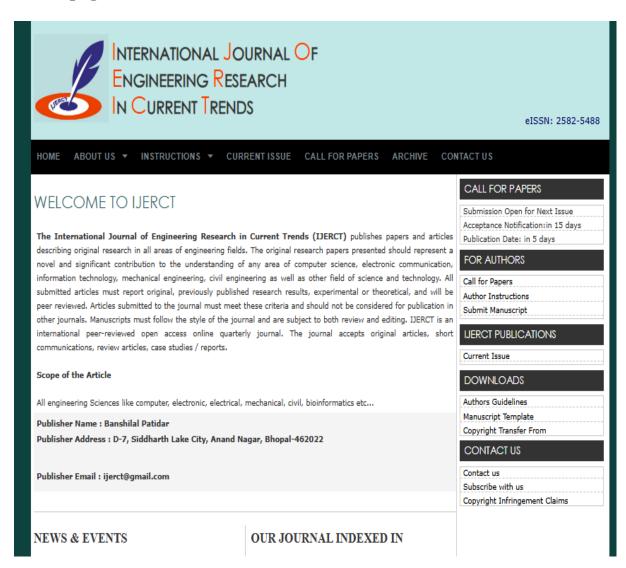


# [2]Title Name: FIXED POINT THEOREMS IN D\*METRIC SPACES FOR EIGHT WEAKLY COMPATIBLE MAPPINGS FOR INTEGRAL TYPE MAPPING

~ By Dr. Shailesh Patel

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# FIXED POINT THEOREMS IN D\*METRIC SPACES FOR EIGHT WEAKLY COMPATIBLE MAPPINGS FOR INTEGRAL TYPE MAPPINGS

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**ABSTRACT:** In the Present Paper, we give some new definitions of D'-metric spaces and we prove a common Fixed Point theorems for Eight mappings under the condition of weakly compatible mappings in complete D'-metric spaces. We get some improved versions of several fixed point theorems in complete D'-metric spaces.

**Keywords:** D-metric, contractive mappings, Complete D'-metric spaces, common fixed point theorems

### 1.INTRODUCTION AND PRELIMINARIES

In 1922, the polish mathematician, Banach, Proved a theorem which ensures, under appropriate conditions, the existences and uniqueness of a fixed point. His result is called Banach's fixed point theorem or the Banach Contraction principle. This theorems Provides a technique for solving a variety of problems of applied nature in mathematical science and engineering. Many authors have extended, generalized and improved Banach's Fixed point Theorem in Different ways, In [21], Jungck introduced the notion of compatible mappings which are more general than commuting and weakly commuting mappings. This concept has been useful for obtaining more comprehensive fixed point theorems. Dhage [8] introduced the concept of generalized metric or D-metric spaces and claimed that D-metric convergence defines a Hausdorff topology and that D-metric is sequentially Continuous in all the three variables. Many authors have taken these claims for granted and used them in proving fixed point theorems in D-metric Spaces. Rhoades[21] generalized Dhage's contractive condition by increasing the number of factors and proved the existence of unique fixed point of a self -maps in D-metric space. Recently, motivated bythe concept of compatibility for metric space, Singh and Sharma[27] introduced the concept of D-compatibility of maps in D-metric space and proved some fixed point theorems using a contractive condition. Unfortunately, almost all theorems in D-metric space are not valid [18,19,20] . Fixed Point Theorems property tolerates the condition of closeness of the range subspaces of the involved mappings. In 2011, the new notion of Common Limit in the range property (shortly property) was given by Sintunavarat and Kumam [30] that does not enforce the above-mentioned conditions. Moreover, the significance of property reveals that closeness of range subspaces is not essential. Using these two important notions many fixed point theorems were established [1]. One of the most pleasant generalizations of Banach principle is the Branciari fixed point theorem for a single mapping satisfying an integral type inequality. After that, serval researchers ([10,11,33], etc.) generalize the result of Branciari in ordinary metric spaces. Many researchers study the applications of common fixed point theorems in complex valued metric spaces; see for instance [31] and the references therein. On the other hand, Liu et al.and Sarwar et al.[16] study the existence and uniqueness of common solution for the system of functional equations arising in dynamic programming with real domain.

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**3.Web link for Journal/book:** <a href="https://www.ijerct.com/papers/03-03/fixed-point-theorems-in-dmetric-spaces-for-eight-weakly-compatible-mappings-for-integral-type-mappings.pdf">https://www.ijerct.com/papers/03-03/fixed-point-theorems-in-dmetric-spaces-for-eight-weakly-compatible-mappings-for-integral-type-mappings.pdf</a>