**CHAPTER-2**

**INTRODUCTION**

The promoting and profitability of the bothered companies are stricken by the developing alternate in faux items. For the primary time, a studies proposed a completely operational blockchain system to save you product counterfeiting and verify the authentication and traceability of proper merchandise across the supply chain. For every product that the administrator provides, a special QR code is generated and saved in the database. The system is built on a blockchain, and businesses that use it will just have to spend the necessary sums of money to create and modify their contracts. Anyone may readily establish the legitimacy of a business and the consumer's purchase of goods using fully revealed smart contract information. Using this anti-counterfeit blockchain technology, companies can demonstrate that the products they offer are real, eliminating the need to compete with low-cost imitations.

**2.1 LITERATURE SURVEY**

### 1. **Title:** [**ARMOR: An anti-counterfeit security Mechanism for low cost Radio frequency identification systems**](https://ieeexplore.ieee.org/abstract/document/8951073/)

# Author: Y.Yilmaz

# Abstract: Counterfeited products are costing the global economy hundreds of billions of dollars annually. Radio frequency identification (RFID) technology provides a promising solution for this problem, wherein each product is fitted with a secure tag, which is difficult to forge. However, RFID technology is faced with numerous security threats, for example, if the communication link between the reader and the tag is compromised, then it will be possible for a malicious adversary to obtain the private data stored on the device..

# 2. Title: Comparative Analysis of Bitcoin, Ethereum, and Libra

# Author: [Wenzheng Li](https://ieeexplore.ieee.org/author/37088900893)

# Abstract: In recent years, with the popularity of Bitcoin and other crypto currencies, the blockchain technology behind it has gradually become a research focus. After the official launch of Facebook's cryptocurrency project Libra and the publication of the Libra white paper, Libra triggered extensive discussions around the world. Libra has aroused the public's awareness of open finance and is deeply impacting the traditional financial system. In this paper, we systematically review and discuss the blockchain technology and summarize Libra's innovations in consensus algorithm, performance, and application scenario through a comparative analysis of Libra, Bitcoin, and Ethereum. Finally, we put forward the challenges that Libra will face in the future.

### 3. **Title**: [Block-supply chain: A new anti-counterfeiting supply chain using NFC and blockchain](https://dl.acm.org/doi/abs/10.1145/3211933.3211939)

# Author: Q Zhong

# Abstract: Current anti-counterfeiting supply chains rely on a centralized authority to combat counterfeit products. This architecture results in issues such as single point processing, storage, and failure. Blockchain technology has emerged to provide a promising solution for such issues. In this paper, we propose the block-supply chain, a new decentralized supply chain that detects counterfeiting attacks using blockchain and Near Field Communication (NFC) technologies.

### 4. **Title**: [**An ADS-B Anti-counterfeiting System Based on TDOA**](https://ieeexplore.ieee.org/abstract/document/9173139/)

### Author**: H.Shen**

# Abstract: The ADS-B signal is not encrypted in any form, and traditional receivers cannot verify the authenticity of the ADS-B signal, which poses a potential risk to aviation safety. Considering the insecurity of ADS-B, this paper proposes a four-station passive multi lateration ADS-B anti-counterfeiting system based on TDOA. A reference station is used to synchronize the clock of each station, and the Chan Algorithm is used for solving TDOA equations. We have built the system and tested it in the real-world with several flights near Beijing Capital

### 5. **Title**: [Smart phone anti-counterfeiting system using a decentralized identity management framework](https://ieeexplore.ieee.org/abstract/document/8861955/)

# Author: AS.Omar

**Abstract**: The effect of counterfeiting on smart phone sales worldwide is estimated at 184 million units, valued at 45.3 billion EUR or 12.9% of total sales. The mobile phone counterfeiting, in addition to its economic impact, has serious security, privacy, and even general safety concerns. The proliferation of Smart Phones devices is on the rise, where the number of smart phone devices shipped in 2017 has surpassed 1.5 billion devices and it is has reached around 1.2 billion devices by end of Q3 2018