(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :04/08/2023

(21) Application No.202311052580 A

(43) Publication Date : 01/09/2023

(54) Title of the invention : METHOD AND SYSTEM FOR PARALLEL TRANSACTION VALIDATION AND BLOCK GENERATION IN A BLOCKCHAIN

(51) International classification : H04L0009320000, G06F0016270000, H04L0009060000, G06Q0020400000, H04L0067109700 (86) International Application No :NA Filing Date :NA (87) International Publication No : NA (61) Patent of Addition to Application Number :NA Filing Date :NA (62) Divisional to Application Number :NA Filing Date :NA	(71)**Name of Applicant :** 1)**Chitkara University** Address of Applicant :Chitkara University, Chandigarh-Patiala National Highway, Village Jhansla, Rajpura, Punjab - 140401, India. Patiala ----------- ----------- 2)**Bluest Mettle Solutions Private Limited** **Name of Applicant : NA** **Address of Applicant : NA** (72)**Name of Inventor :** 1)**MISHRA, Rahul** Address of Applicant :ODC-4, Panchshil Tech Park, inside Courtyard by Marriott premises, Hinjewadi Phase - 1, Pune - 411057, Maharashtra, India. Pune ----------- ----------- 2)**SINGH, Dhiraj** Address of Applicant :ODC-4, Panchshil Tech Park, inside Courtyard by Marriott premises, Hinjewadi Phase - 1, Pune - 411057, Maharashtra, India Pune ----------- ----------- 3)**SINGH, Gurjinder** Address of Applicant :Chitkara University, Chandigarh-Patiala National Highway, Village Jhansla, Rajpura, Punjab - 140401, India. Patiala ----------- -----------

(57) Abstract :
The present disclosure relates generally to the field of blockchain technology. More specifically, the present disclosure relates to a method and system for parallel transaction validation and block generation in a blockchain. The method (100) includes dividing (102) a blockchain network (202) into a plurality of sub-networks or shards (204) by a sharding mechanism. The subset of transactions is validated (106) in each shard (204) concurrently using a distributed consensus algorithm embedded on a plurality of nodes (208) by a set of validators. The method (100) further includes generating (110) a block for each shard (204) based on the validated transactions by a block generation mechanism (214) and linking (112) the generated blocks to form a blockchain (216). Advantageously the present invention aims to improve the throughput and scalability of blockchain networks by enabling concurrent transaction validation and block generation using a distributed consensus algorithm and sharding.

No. of Pages : 21 No. of Claims : 10