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(57) Abstract :

Exemplary aspects of the present disclosure are directed towards the SMART RING-MAIN DISTRIBUTION SYSTEM consists of the plurality of Smart Transformer Management System (STMS) 101 connected to Smart Ring-Main Distribution System (SRMDS-MAIN) 103 through Communication Network 102. Smart Transformer Management System (STMS) 101 is an integration of low-cost ESP32 based microcontroller 101a with advanced power management chip 101b, six potential transformers 101d, six current sensors 101c. Circuit Breaker 101e, Temperature sensor 101f, and vibrations sensor 101g. STMS 101 uses the Random Forest-based Machine Learning (ML) algorithm to determine internal and external Faults and operates relay contacts to control circuit breakers 101e. All the power data transmitted to SRMDS-MAIN 103 for analyzing the data. Power data is normalized and fed to ML algorithm to identify and predict faults, load prediction, transformer efficiency, losses, and oil temperature variation. By using ML algorithm, determine the stress on the line after a fault and isolates the section.

No. of Pages : 21 No. of Claims : 7

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THE PATENT ACT, 1970  
(39 of 1970)  
&  
THE PATENTS RULES, 2003

## DECLARATION AS TO INVENTORSHIP

[See section 10(6) and rule 13(6)]

### 1. NAME OF APPLICANT(S)

Dr. M NAGESWARA RAO, Dr.K.KALYAN RAJ, Mr. SK. MAHAMMAD SHAREEF,

I hereby declare that the true and first inventor(s) of the invention disclosed in the complete specification filed in pursuance of my/our application numbered 202041032227 dated 28/07/2020 is/are

### 2. INVENTOR(S)

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Dated this: 28/07/2020 Day of 20:

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### 3. DECLARATION TO BE GIVEN WHEN THE APPLICATION IN INDIA IS FILED BY THE APPLICANT(S) IN THE CONVENTION COUNTRY:--

We the applicant(s) in the convention country hereby declare that our right to apply for a patent in India is by way of assignment from the true and first inventor(s):

Dated this: 28/07/2020 Day of 20:

Signature

Name of the signatory

### 4. STATEMENT (to be signed by the additional inventor(s) not mentioned in the application form)

We assent to the invention referred to in the above declaration, being included in the complete specification filed in pursuance of the stated application.

28-07-2020

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