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(71)Name of Applicant :

1)INDIAN INSTITUTE OF TECHNOLOGY (INDIAN SCHOOL OF MINES), DHANBAD

Address of Applicant :Dhanbad - 826004, Jharkhand, India Dhanbad -----

Name of Applicant : NA

Address of Applicant : NA

(72)Name of Inventor :

1)Amit Rai Dixit

Address of Applicant :Department of Mechanical Engineering, Indian Institute of Technology (Indian School of Mines), Dhanbad, Dhanbad - 826004, Jharkhand, India Dhanbad -----

2)Annada Prasad Moharana

Address of Applicant :Department of Mechanical Engineering, Indian Institute of Technology (Indian School of Mines), Dhanbad, Dhanbad - 826004, Jharkhand, India Dhanbad -----

3)Ratnesh Raj

Address of Applicant :Department of Mechanical Engineering, Indian Institute of Technology (Indian School of Mines), Dhanbad, Dhanbad - 826004, Jharkhand, India Dhanbad -----

(57) Abstract :

The present invention relates to a system and a method of automatic fibre placement during vat-photopolymerization additive manufacturing for composite material fabrication. The system comprises three main components: a guiding fixture (100), an Automatic Fabric Mover (AFM) (200), a 3D printer (400), all connected with a processor (300). The processor facilitates integration among the components. In this invention, fabrics (104) are precisely positioned by temporarily halting the printing process. Simultaneously, the guiding fixture (100) in allocating the necessary fabric for reinforcement. The AFM (200) then retrieves the fabric (3) from the position P3 on the guiding fixture (100) and places it into the vat (402) of photopolymer within the 3D printer (400). The AFM (200) is designed with several angular movements to ensure comprehensive coverage of the end gripper (201) within the vat (401). This cycle continues to execute according to the required sequence, and the complete composite structure is produced with several reinforcement layers. [figure 5]

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