

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202511043069 A

(19) INDIA

(22) Date of filing of Application :03/05/2025

(43) Publication Date : 23/05/2025

(54) Title of the invention : A CRYOGENIC FOAM INJECTION APPARATUS FOR INSULATION PANEL FABRICATION

(51) International classification :B29C0044340000, B33Y0010000000, B29C0064118000, B29C0044380000, B33Y0080000000

(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)NOIDA INSTITUTE OF ENGINEERING & TECHNOLOGY

Address of Applicant :19, Knowledge Park-II, Institutional Area, Greater Noida – 201306, Uttar Pradesh, India. -----

Name of Applicant : NA

Address of Applicant : NA

(72)Name of Inventor :

1)Dr. ABHISHEK PRATAP SINGH

Address of Applicant :Department of Mechanical Engineering, Noida Institute of Engineering & Technology, Greater Noida. Greater Noida -----

(57) Abstract :

A cryogenic foam injection apparatus (101) for fabricating insulation panels (102) includes an insulated nozzle (103), cryogenic foam chamber (108), mold cavity (105), sensors (104), and a control unit (107). The system enables uniform low-temperature foam expansion and curing within a thermally regulated mold, providing high-strength panels with improved thermal resistance and minimized post-processing energy requirements.

No. of Pages : 14 No. of Claims : 5