

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202511043075 A

(19) INDIA

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

(43) Publication Date : 23/05/2025

(54) Title of the invention : AN APPARATUS FOR SYNTHESIZING POROUS METAL FOAMS FOR LIGHTWEIGHT APPLICATIONS

(51) International classification :B22F0003110000, B01D0069020000, B29K0105040000, C08J0009000000, C22C0001080000

(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

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(57) Abstract :

An apparatus for synthesizing porous metal foams includes a gas injection system (14), foaming chamber (16), motor-driven stirrer (18), outlet conduit (22), foam collection unit (24), and control interface (26). The device enables controlled pore formation through dynamic gas dispersion and temperature regulation. Real-time sensor feedback adjusts synthesis parameters for optimal porosity and mechanical strength. The system supports various metals and foaming agents, allowing consistent and scalable production of lightweight foamed structures for industrial applications.

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