(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :20/02/2026

(21) Application No.202641019940 A

(43) Publication Date : 06/03/2026

(54) Title of the invention : Copper nano coated radiator for enhanced thermal efficiency

(51) International classification	:F28F 21/08, F28F 13/18, F28F 1/12, F28F 1/32, H05K 7/20	(71)**Name of Applicant :** **1)Vels Institute of Science, Technology & Advanced Studies (VISTAS)** Address of Applicant :The Registrar, Vels Institute of Science, Technology & Advanced Studies (VISTAS), Pallavaram, Chennai-600117, Tamil Nadu, India Tamil Nadu India (72)**Name of Inventor :** **1)Dr.T.Somanathan**
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(32) Priority Date	:NA	**3)Dr. M. Parthasarathy**
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(86) International Application No Filing Date	: :01/01/1900	**5)Dr. K. M. Kumar** **6)Dr.K.Karunakaran**
(87) International Publication No	: NA	**7)Dr.S.Sivabalan**
(61) Patent of Addition to Application Number Filing Date	:NA :NA	**8)Mr. Omkar A. Jarali** **9)Dr. V. Gowthami**
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(57) Abstract :

ABSTRACT COPPER NANO COATED RADIATOR FOR ENHANCED THERMAL EFFICIENCY The present invention discloses a copper nano coated radiator for enhanced thermal efficiency. The copper nano coated radiator comprises a radiator body comprising a plurality of heat exchange tubes and fins configured to transfer heat from a working fluid to an окружа surrounding medium. The base substrate forming the heat exchange tubes and fins. The copper nano-coating layer uniformly deposited on at least an outer surface of the heat exchange tubes and fins, wherein the copper nano-coating layer comprises copper nanoparticles having a nano-scale dimension and is configured to increase surface area, thermal conductivity, and heat transfer efficiency of the radiator as compared to an uncoated radiator. The copper nanoparticles have an average particle size in the range of 1 nm to 100 nm. The copper nano-coating layer is deposited by at least one of electrochemical deposition, physical vapor deposition, chemical vapor deposition, thermal spraying, or sol–gel coating. The copper nano-coating layer has a thickness in the range of 50 nm to 10 micrometers.

No. of Pages : 14 No. of Claims : 9