

A Review on Enhancing Heat Transfer Processes by Open-Cell Metal Foams and Industrial Applications

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Abstract : In the last couple of decades researchers' attitudes were focused on developing and enhancing heat transfer processes by using new components or cellular solids that divide into stochastic structures and periodic structures. Open-cell metal foams are part of stochastic structures families that they can be considered as an avant-garde technology and they have unique properties, this porous media can have tremendous achievements in thermal processes. This paper argues and surveys postulating possible in industrial thermal issues which include: compact electronic cooling, heat exchanger, aerospace, fines, turbo machinery, automobiles, cryogen tanks, biomechanics, high temperature filters and etc. Recently, by surveying exponential rate of publications in thermal open-cell metal foams, all can be demonstrated in a holistic view which can lead researchers to a new level of understanding in different industrial thermal sections.

Keywords : heat transfer, industrial thermal, cellular solids, open cell metal foam

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