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LBM simulation of free convection in a nanofluid filled incinerator containing a hot block

Mohamed Ammar Abbassi , Mohammad Reza Safaei ,
Ridha Djebali , Kamel Guedri , Belkacem Zeghmami ,
Abdullah A.A.A. Alrashed

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Highlights

- Nanofluid MHD free convection in an incinerator containing a hot block was studied.
- LBM was used with a D2Q9-D2Q9 double population's model as utilized CFD approach.
- Validations were conducted with one experimental and eight numerical former studies.
- Nusselt number is a descending function with the Hartmann number.
- Increasing the hot block height or width causes heat transfer enhancement.

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