Analyzing thermo-hydrodynamics of nanofluid flowing through a wavy U-turn channel

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Highlights:

- The effect of nanoparticles on heat transfer and friction factor in wavy U-turn channel is investigated.
- the thermal–hydraulic performance factor is determined to investigate heat transfer enhancement and frictional.
- the effect of nanoparticles volume fraction becomes more pronounced at higher pressure gradient.
- The thermal–hydraulic performance factor grows by increasing nanoparticles volume fraction and decreasing the number of waves in channel.