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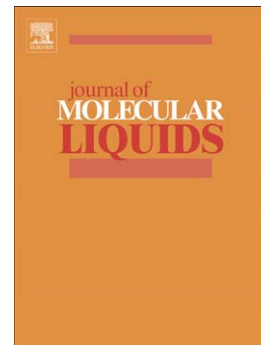
Influence of magnetic field on CNT- Polyethylene nanofluid flow over a permeable cylinder

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Influence of magnetic field on CNT- Polyethylene nanofluid flow over a permeable cylinder

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Abstract

In this paper, Lorentz force impact on CNT- Polyethylene nanofluid flow characteristics over a stretching permeable cylinder is studied using Runge–Kutta method. Similarity transformation has been applied to reach ODEs. Investigation has been completed by studying the impacts of nanoparticle volume fraction, injection parameter, Reynolds and magnetic numbers on nanofluid flow style. Results show that nanofluid velocity augments with rise of CNT volume fraction and injection parameter but it reduces with rise of magnetic number.

Keywords: Nanofluid; Stretching cylinder; CNT- Polyethylene; Boundary layer; Injection; Magnetic field.

Nomenclature

a	radius of cylinder	γ	suction/injection parameter
c	positive constant	ρ	fluid density
w_w	velocity of the stretching cylinder	ν	kinematic viscosity
f	stream function		
p	pressure	S	Nano-solid-

Subscripts

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