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## **THERMAL EFFECT IN FSPL HEAT CONDUCTION MODEL IRRADIATED BY LASER HEAT SOURCE**

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### **ABSTRACT**

The fractional single-phase-lagging heat conduction (FSPL) model is obtained by combining scalar time fractional conservation equation to the single-phase-lagging (SPL) heat conduction model. Based on the FSPL heat conduction model, thermal effect within a finite thin film irradiated by laser heat source has been investigated. The effect of different parameters on solution has been observed and studied the asymptotic behavior of the FSPL model. The analytical solution is obtained using Laplace transform method. The whole analysis is presented in dimensionless form. A numerical example of particular interest has been studied and discussed in details.