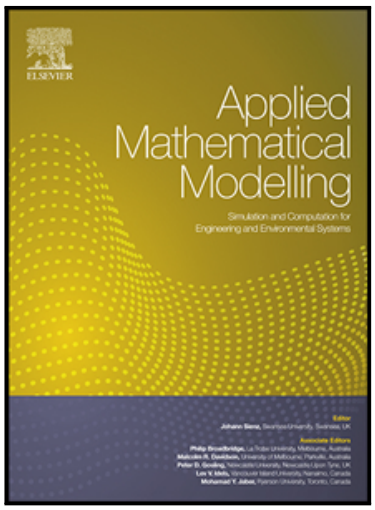

Dual-Phase-Lag Analysis of $CNT - MoS_2 - ZrO_2 - SiO_2 - Si$ Nano-Transistor and Arteriole in Multi-layered Skin

Mohammad Jamshidi, Jafar Ghazanfarian

PII: S0307-904X(18)30159-8
DOI: 10.1016/j.apm.2018.03.035
Reference: APM 12226

To appear in: *Applied Mathematical Modelling*

Received date: 11 May 2017
Revised date: 21 March 2018
Accepted date: 29 March 2018

Please cite this article as: Mohammad Jamshidi, Jafar Ghazanfarian, Dual-Phase-Lag Analysis of $CNT - MoS_2 - ZrO_2 - SiO_2 - Si$ Nano-Transistor and Arteriole in Multi-layered Skin, *Applied Mathematical Modelling* (2018), doi: 10.1016/j.apm.2018.03.035

Highlights

- Two new finite-volume solvers have been developed for DPL non-Fourier model.
- The solvers can capture curved boundaries in 3D arbitrary shapes.
- The solvers have been checked using 4 benchmarks.
- Temperature distribution in human's skin with a circular arteriole was obtained.
- A newly invented 1nm nano-device of $MoS_2 - ZrO_2 - CNT - Si - SiO_2$ has been thermally analyzed.