

Anomalous Low Temperature Specific heat in Graphene-On-Substrate in Ferromagnetic State: A Green's function approach

R SWAIN¹, S SAHU¹ and G C ROUT²

¹School of Applied Sciences (Physics), KIIT University, Bhubaneswar, Pin-751024

²Condensed Matter Physics Group ,Physics Enclave, Plot No.- 664/4825, Lane -4 A,
Shree Vihar, C. S. Pur, PO- Patia, Bhubaneswar- 751031, Odisha, India

Received: 24.11.2016 ; Revised : 13.12.2016 ; Accepted :12.1.2017

Abstract. We report here a tight-binding model calculation taking into account of ferromagnetic order in graphene-on-substrate. The repulsive Coulomb interaction is considered within a mean-field model taking into account of the ferromagnetic moments at each sub-lattice of the honeycomb lattice. The sub-lattice magnetizations are calculated by Zubarev's Green function technique and are solved self-consistently.

Keywords: Graphene, Ferromagnetism , Electron specific heat, Tight binding model

PACS No: 75.75.+a , 73.02. -r , 75.50. Xx

[\[Full Paper \]](#)