SIMPLE BAND MODEL OF DOPED FULLERENE CRYSTAL

Andrzej Koper and Michał Mucha
Institute of Physics, Adam Mickiewicz University
ul. Umultowska 85, 61-614 Poznań, Poland

We present arguments that doped fullrene crystal (eg. A_3C_{60}) can be modelled as three dimensional quantum billiard, where the C_{60} molecules paly role of scattering centers for free (conducting) electrons.
We determine electrons bands spectrum, and wave vectors for this model as well as calculate electrons density of states and specific heat. We also determine conductivity, where dissipation on doped ions and fonons is taken into account.

9.7 cm

13.4 cm

Subject category :

1. Correlated Electrons and High Temperature Superconductors

Presentation mode :
poster

Corresponding author :
A. Koper

Address for correspondence :
Institute of Physics, Adam Mickiewicz University
ul. Umultowska 85, 61-614 Poznań, Poland

Email address :
andkoper@main.amu.edu.pl