MODIFIED GRAPHENE-LIKE FILMS AS A NEW CLASS OF SEMICONDUCTORS WITH A VARIABLE ENERGY GAP

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S u m m a r y

It has been theoretically predicted and experimentally proved that the deformation of thin graphite-like carbon films is accompanied by the appearance of an energy gap at the K-point, the gap being proportional to a strain. A metal–semiconductor phase transition in a thin graphite (or multilayered graphene) film has been revealed. This phenomenon can be promising for the development of semiconducting materials.