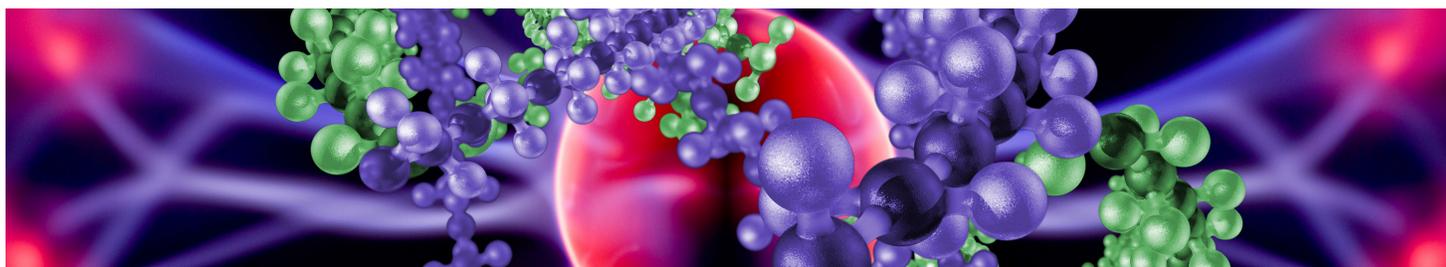


Large Scale Graphene Production



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Technology Summary

Graphene is an emerging one-atom-thick carbon material which has the potential for a wide range of applications from photovoltaics and electronics to desalination membranes. Since its introduction to broad research, graphene has quickly attained the status of a wonder nanomaterial and continued to draw the attention of an increasing number of researchers due to its unique properties. Despite the well-recognized potential of graphene for numerous applications, a reliable technology for scaled up graphene production remains a bottleneck in transitioning from research to development of practically viable devices.

The present invention for making graphene was developed for atmospheric pressure conditions in contrast to conventional methods, which use low pressure deposition. Atmospheric deposition conditions constitute a major advantage for continuous graphene sheet synthesis. Moreover we have developed the process for synthesis of graphene which has grain size significantly surpassing the current state of the art. In addition, the current invention enables continuous synthesis of graphene sheets, drastically decreasing the cost and production time and paving the way to new, large scale graphene applications such as large displays and photovoltaic cells.

Patents

Ivan V. Vlassiuk, Sergei Smirnov, William H. Peter, Adrian Sabau, Sheng Dai, Pasquale F. Fulvio, Iliia N. Ivanov, Nickolay V. Lavrik, and Panagiotis G. Datskos. *High Quality Large Scale Single and Multilayer Graphene Production by Chemical Vapor Deposition*, U.S. Provisional Patent Application U.S. 61/583,638, filed January 6, 2012.

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