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Non-patent Document 6: S. Horiuchi et al., JJAP 42(2003) L1073

Non-patent Document 7: M. Hirata et al., Carbon 42(2004) 2929

SUMMARY ~~OF INVENTION~~

PROBLEM TO BE SOLVED ~~BY THE INVENTION~~

(0011) In the light of the above-mentioned background, an object of the present ~~invention~~disclosure is to provide a method being capable of providing a transparent conductive film and a conductive film, which comprise graphenes, more simply and stably.

(0012) Further, the present ~~invention~~disclosure provides a substrate coated with multi-layer graphenes obtained by laminating, on surface of a substrate, multi-layer graphenes from a mass of multi-layer graphenes.

MEANS TO SOLVE THE PROBLEM

(0013) The inventors of the present ~~invention~~disclosure have made intensive studies, and as a result, have found that a substrate coated with multi-layer graphenes, being useful as a transparent conductive film and a conductive film, can be produced simply and stably by laminating multi-layer graphenes directly on surface of a substrate using a mass of multi-layer graphenes formed by aggregation of many multi-layer graphenes. Then, further studies have been made to complete the present ~~invention~~disclosure.

(0013a) In an aspect, there is provided a method for producing a substrate coated with multi-layer graphenes, comprising laminating, on surface of a substrate, multi-layer graphenes from a mass of multi-layer graphenes.

wherein the mass of multi-layer graphenes is one resulting from aggregation of many multi-layer graphenes without being laminated to each other, and

the thicknesses of the multi-layer graphenes are in the range of 0.34nm to 100nm.

(0013b) In another aspect, there is provided a method for producing a substrate coated with multi-layer graphenes, wherein the substrate coated with multi-layer graphenes has a pattern of thick and thin layers of multi-layer graphenes,

said method comprises:

preparing a transfer mold provided, on its surface, with convex and concave portions coinciding with the pattern, overlapping a back surface of the substrate over the surface of the transfer mold, and rubbing on the surface of the substrate multi-layer graphenes from a mass of multi-layer graphenes, wherein the mass of multi-layer graphenes is one resulting from aggregation of many multi-layer graphenes without being laminated to each other, and the thicknesses of the multi-layer graphenes are in the range of 0.34nm to 100nm.

(0013c) In another aspect, there is provided a method for producing a substrate coated with multi-layer graphenes, comprising laminating, on surface of a substrate, multi-layer graphenes from a mass of multi-layer graphenes, and then pressing the surface of the substrate,

wherein the mass of multi-layer graphenes is one resulting from aggregation of many multi-layer graphenes without being laminated to each other, and

the thicknesses of the multi-layer graphenes are in the range of 0.34nm to 100nm.

(0013d) In another aspect, there is provided a method for producing a substrate coated with multi-layer graphenes, comprising laminating, on surface of a substrate, multi-layer graphenes from a mass of multi-layer graphenes,

wherein the lamination is carried out by single-fluid spray-coating of the surface of the substrate with a dispersion of multi-layer graphenes, a liquid of pulverized multi-layer graphenes or a dispersion of residual graphenes, which are prepared from a mass of multi-layer graphenes, wherein the mass of multi-layer graphenes is one resulting from aggregation of many multi-layer graphenes without being laminated to each other, and the thicknesses of the multi-layer graphenes are in the range of 0.34nm to 100nm.

(0013e) In another aspect, there is provided a substrate coated with multi-layer graphenes, said substrate is produced by laminating, on surface of a substrate, multi-layer graphenes from a mass of multi-layer graphenes, wherein the mass of multi-layer graphenes is one resulting from aggregation of many multi-layer graphenes without being laminated to each other, and the thicknesses of the multi-layer graphenes are in the range of 0.34nm to 100nm.

(0013f) In another aspect, there is provided a substrate coated with multi-layer graphenes, wherein the substrate coated with multi-layer graphenes has a pattern of thick and thin layers of multi-layer graphenes.

(0014) Namely, the present ~~invention~~disclosure relates to:

(1) a method for producing a substrate coated with multi-layer graphenes, comprising laminating, on surface of a substrate, multi-layer graphenes from a mass of multi-layer graphenes,