WHAT IS CLAIMED IS:

1. A process for synthesizing graphene, the process comprising:

   (a) applying a voltage pulse across a conductive carbon source that is substantially not graphene; and

   (b) heating the conductive carbon source with the voltage pulse to convert the conductive carbon source into graphene.

2. The process of Claim 1, wherein

   conductivity of the conductive carbon source is greater than 10^{-5} S/cm; and/or

   the conductive carbon source is selected from a group consisting of anthracite coal, calcined petroleum coke, shungite, carbon nanotubes, asphaltenes, acetylene black, carbon black, and mixtures thereof; and/or

   the conductive carbon source comprises a conductive carbon source additive that renders the conductive carbon source to have sufficient conductivity for the process; and/or

   the conductive carbon source comprises less than 50% graphene.

3. The process of any of Claims 1-2, wherein

   (a) the conductive carbon source additive is selected from a group consisting of anthracite coal, calcined petroleum coke, carbon nanotubes, graphene quantum dots, acetylene black, carbon black, shungite, graphene, or mixtures thereof;

   (b) the conductive carbon source is a lower conductivity carbon material selected from a group consisting of feces, plastics, vinyl polymers, condensation polymers, step-growth polymers, chain-growth polymers, living polymers, rubbers, humic acid, carbohydrates, rice powder, food waste, food, coal,

organic waste, organic material, bituminous coal, coke, petroleum coke, oil, petroleum products, carbon from the stripping of the non-carbon atoms off of natural gas or oil or carbon dioxide, wood, cellulose, leaves, branches, grass, biomass, animal carcasses, fish carcasses, proteins, and mixtures thereof; and

(c) the conductive carbon source additive is added to the lower conductivity carbon material to render the lower conductivity source to have the sufficient conductivity for the process.

4. The process of any of Claims 1-3, wherein

the synthesized graphene is turbostratic graphene, and/or

the turbostratic graphene is a graphene with mis-oriented graphene layers.

5. The process of Claim 1, wherein the process is a continuous process of moving the conductive carbon source and the synthesized graphene, wherein the movement of the conductive carbon source and synthesized graphene is synchronized to applying the voltage pulse across the conductive carbon source.

6. The process of Claim 1, wherein the conductive carbon source comprises a conductive carbon source additive that renders the conductive carbon source to have sufficient conductivity for the process.

7. The process of Claim 6, wherein

(a) the conductive carbon source additive is selected from a group consisting of anthracite coal, calcined petroleum coke, carbon nanotubes, graphene quantum dots, acetylene black, carbon black, shungite, graphene, or mixtures thereof;

(b) the conductive carbon source is a lower conductivity carbon material selected from a group consisting of feces, plastics, vinyl polymers, condensation polymers, step-growth polymers, chain-growth polymers, living polymers, rubbers, humic acid, carbohydrates, rice powder, food waste, food, coal, organic waste, organic material, bituminous coal, coke, petroleum coke, oil, petroleum products, carbon from the stripping of the non-carbon atoms off of natural gas or oil or carbon dioxide, wood, cellulose, leaves, branches, grass, biomass, animal carcasses, fish carcasses, proteins, and mixtures thereof; and

(c) the conductive carbon source additive is added to the lower conductivity carbon material to render the lower conductivity source to have the sufficient conductivity for the process.

8. A composite material produced using the process of any of Claims 1-7, the composite material comprising turbostratic graphene and a second material.

9. The composite material of Claim 8, wherein the second material is selected from a group consisting of concrete, cement, plastics, paints, coatings, foam, polyurethane foam, flooring, roofing, wood, plywood, aluminum, steel, copper, metals, asphalt, metal oxides, carbon-carbon composites, fibers, films and combinations thereof.

10. The composite material of Claim 8, wherein the composite material comprises between 0.001 wt% and 10 wt% of the turbostratic graphene.

11. The composite material of Claim 8, wherein

tensile strength of the composite material is greater than tensile strength of the second

material without the turbostratic graphene; and/or

compressive strength of the composite material is greater than compressive strength of the second material without the turbostratic graphene; and/or

Young's modulus of the composite material is substantially different than the Young's modulus of the second material without the turbostratic graphene; and/or

the Young's modulus of the composite material is at least 10% different than the Young's modulus of the second material without the turbostratic graphene; and/or

electrical conductivity of the composite material is greater than electrical conductivity of the second material without the turbostratic graphene; and/or

thermal conductivity of the composite material is greater than thermal conductivity of the second material

12. A bulk graphene material, wherein

(a) a majority of the bulk graphene material is turbostratic graphene; and

(b) the bulk graphene material has a weight of at least 1 gram.

13. The bulk graphene material of Claim 12, wherein at least 90 wt% of the graphene is turbostratic graphene.

14. The bulk graphene material of Claim 12, wherein

(a) the bulk graphene material is synthesized from a carbon source material that predominately comprises a solid carbon source, and

(b) the solid carbon source is a carbon source in a solid state.

15. The bulk graphene material of Claim 12, wherein

(a) the bulk graphene material is synthesized from a carbon source material that predominately comprises a liquid carbon source, and

(b) the liquid carbon source is a carbon source in a liquid state.