CLAIMS:

1. Synthetic CVD diamond material comprising single substitutional nitrogen (N_s^0) at a concentration of greater than 0.5 ppm and having a total integrated absorption in the visible range from 350 nm to 750 nm such that at least 35% of the absorption is attributable to N_s^0.

2. Synthetic CVD diamond material according to claim 1, having a hue angle greater than 80° for a transmission pathlength of 1 mm.

3. Synthetic CVD diamond material according to any one of claims 1 or 2, wherein the material has a photoluminescence spectrum at 77 K using the 488 nm excitation of an argon-ion laser which shows a peak at from 543.0 to 543.2 nm, with an intensity ratio of this peak normalized to the 1st order diamond Raman (at 521.9 nm for this excitation wavelength) of greater than 0.005.

4. Synthetic CVD diamond material according to any one of claims 1 to 3, wherein the concentration of N_s^0 is greater than 2.5 ppm, as measured using the 270 nm peak using UV-visible absorption spectroscopy.

5. Synthetic CVD diamond material according to any one of claims 1 to 4, wherein the elemental concentration of individual chemical impurities other than nitrogen and hydrogen is less than 0.1 ppm.

6. Synthetic CVD diamond material according to any one of claims 1 to 5, wherein at least 50% of the volume of the synthetic CVD diamond material is formed from a single growth sector.

7. Synthetic CVD diamond material according to any one of claims 1 to 6, having the colour parameters a* between - 20 and 1; b* between 5 and 20; C* between 0 and 30 and L* between 40 and 100.

8. Synthetic CVD diamond material according to any one of claims 1 to 7, wherein the synthetic CVD diamond material is in the form of a freestanding entity having a thickness of greater than 0.2mm.

9. Synthetic CVD diamond material according to any one of claims 1 to 7, wherein the synthetic CVD diamond material is in the form of a layer having a thickness of 0.5 mm or less.

10. Synthetic CVD diamond material according to any one of claims 1 to 8, wherein the synthetic CVD diamond material is in the form of a doublet.

11. A gemstone comprising synthetic CVD diamond material according to anyone of claims 1 to 10.

12. An electronic device comprising synthetic CVD diamond material according to anyone of claims 1 to 9.

CLAIMS:

1. Synthetic CVD diamond material comprising single substitutional nitrogen (N_s^0) at a concentration of greater than 0.5 ppm and having a total integrated absorption in the visible range from 350 nm to 750 nm such that at least 35% of the absorption is attributable to N_s^0, wherein the synthetic CVD diamond material meets these requirements in directly synthesized form without requiring an annealing technique.

2. Synthetic CVD diamond material according to claim 1, having a hue angle greater than 80° for a transmission pathlength of 1 mm.

3. Synthetic CVD diamond material according to any one of claims 1 or 2, wherein the material has a photoluminescence spectrum at 77 K using the 488 nm excitation of an argon-ion laser which shows a peak at from 543.0 to 543.2 nm, with an intensity ratio of this peak normalized to the 1st order diamond Raman (at 521.9 nm for this excitation wavelength) of greater than 0.005.

4. Synthetic CVD diamond material according to any one of claims 1 to 3, wherein the concentration of N_s^0 is greater than 2.5 ppm, as measured using the 270 nm peak using UV-visible absorption spectroscopy.

5. Synthetic CVD diamond material according to any one of claims 1 to 4, wherein the elemental concentration of individual chemical impurities other than nitrogen and hydrogen is less than 0.1 ppm.

6. Synthetic CVD diamond material according to any one of claims 1 to 5, wherein at least 50% of the volume of the synthetic CVD diamond material is formed from a single growth sector.

7. Synthetic CVD diamond material according to any one of claims 1 to 6, having the colour parameters a* between - 20 and 1; b* between 5 and 20; C* between 0 and 30 and L* between 40 and 100.

8. Synthetic CVD diamond material according to any one of claims 1 to 7, wherein the synthetic CVD diamond material is in the form of a freestanding entity having a thickness of greater than 0.2 mm.

9. Synthetic CVD diamond material according to any one of claims 1 to 8, wherein the synthetic CVD diamond material is in the form of a layer having a thickness of 0.5 mm or less.

10. Synthetic CVD diamond material according to any one of claims 1 to 9, wherein the synthetic CVD diamond material is in the form of a doublet.

11. A gemstone comprising synthetic CVD diamond material according to any one of claims 1 to 10.

12. An electronic device comprising synthetic CVD diamond material according to any one of claims 1 to 10.