THE INVENTION CLAIMED IS

1. A composite radiation reflecting and absorbing composition, comprising:

a plurality of randomly oriented colloidal crystals, each said crystal comprising (1) radiation reflecting particles arranged in a colloidal array and (2) radiation absorbing particles dispersed in said crystals, such that said composition scatters radiation in a wavelength band in substantially all directions and absorbs radiation in another wavelength band.

2. The composite radiation reflecting and absorbing composition of claim 1, wherein said plurality of colloidal crystals are provided as aggregates of said crystals.

3. The composite composition of claim 2, wherein said aggregates further comprise a binder.

4. The composite composition of claim 3, wherein said radiation absorbing particles are dispersed in said binder.

5. The composite composition of claim 4, wherein said radiation absorbing particles comprise a dark-colored pigment or dye.

6. The composite composition of claim 5, wherein said dark-colored pigment particles comprise carbon black or iron oxide.

7. The composite composition of claim 1, wherein said radiation absorbing particles comprise less than 10 wt.% of said crystal.

8. The composite composition of claim 7, wherein said radiation absorbing particles comprise less than 1 wt.% of said crystals.

9. The composite composition of claim 1, wherein said radiation absorbing particles are sized less than 100nm.

10 The composite composition of claim 1, wherein said radiation reflecting particles each comprise a shell defining an interior.

11. The composite composition of claim 1, further comprising a film-forming composition.

12. A method of producing a composite radiation reflecting and absorbing composition comprising:

producing a dispersion comprising charged monodispersed first particles and second radiation absorbing particles;

arranging the first particles into periodic arrays to form a plurality of colloidal crystals in which the second particles are randomly distributed, wherein each crystal scatters radiation by reflection from the first particles and absorbs radiation by the second particles; and

dispersing the crystals such that the crystals are randomly oriented in a carrier to produce a composition that scatters radiation in a wavelength band in substantially all directions and absorbs radiation in another wavelength band.

13. The method of claim 12, wherein the first particles are charged and the second particles are uncharged or have the same charge as the first particles.

14. The method of claim 12, further comprising dispersing the first particles in a first dispersion, dispersing the second particles in a second dispersion, and combining the first and second dispersions.

15. The method of claim 12, further comprising spray drying the crystals dispersed in a binder to produce aggregates of crystals and binder.

16. The method of claim 13, wherein the interiors of the first particles define voids.

17. The method of claim 16, wherein the second particles are received within the first particles.

18. The method of claim 12, wherein the second particles are randomly dispersed in the crystals.

19. A reflective coating composition comprising the composite composition of claim 1 and a film-forming composition.