ALUMINUM PHOSPHATE COMPOSITE MATERIALS AND COMPOSITIONS

ABSTRACT

AlP composite materials comprise an AlP aggregate core, and a shell disposed partially or entirely over the core and formed from a pigment material, e.g., TiO_2, having an index of refraction greater than the core, providing an overall index or refraction greater than the core and suited for use as a pigment replacement or extender. The AlP core comprises amorphous AlP, crystalline AlP, or a combination thereof, and can have an average particle size of less than about 30 microns. The TiO_2 can have an average grain size less than about 10 microns. The shell can have a layer thickness that is at least about 0.0001 microns. The shell is bonded to the core by a reaction between functional groups of the shell and core. The AlP composite material can be engineered to provide properties in addition to brightness for use as a pigment such as anticorrosion and/or antimicrobial protection.

[FIG. 1]