CLAIMS

1. A system for generating a gonio-effect coating pigmentation of a target coating, comprising:

a database for storing an empirical dataset, the dataset comprising empirically calculated data relating to a plurality of gonio-effect pigments;

a processor in communication with the database; and

a spectrophotometer in communication with the processor;

wherein the empirical dataset is generated by;

obtaining gonio-effect pigment reflectance data from the plurality of gonio-effect pigments, the gonio-effect pigment reflectance data comprising a plurality of reflectances from a plurality of reflection angles for each of the plurality of gonio-effect pigments; and

calculating gonio-effect pigment pseudo-electrostatics data from the gonio-effect pigment reflectance data for each of the plurality of gonio-effect pigments, wherein calculating the pseudo-electrostatics data comprises treating the reflectances obtained for each of the plurality of gonio-effect pigments obtained at each of the plurality of reflection angles as point charges and applying Coulomb's Law;

and the processor is programmed to generate the gonio-effect coating pigmentation of the target coating by:

obtaining, from the spectrophotometer, target coating reflectance data from the target coating, the target coating reflectance data comprising a plurality of reflectances from a plurality of reflection angles from the target coating;

calculating target coating pseudo-electrostatics data from the target coating reflectance data for the target coating, wherein calculating the pseudo-electrostatics data comprises treating the reflectances obtained for the target coating obtained at each of the plurality of reflection angles as point charges and applying Coulomb's Law; and

generate, based on the gonio-effect and target coating pseudo-electrostatics data, a coating pigmentation that is the same or substantially

similar in appearance to the target coating, wherein generating the coating pigmentation comprises:

empirically correlating the target coating pseudo-electrostatics data calculated for the target coating to the gonio-effect pseudo-electrostatics data calculated for the empirical dataset and predicting at least one texture feature of the target coating based on the correlating.

2. A computer implemented method for generating a gonio-effect coating pigmentation of a target coating, comprising:

accessing, from a database, an empirical dataset stored on the database, the dataset comprising empirically calculated data relating to a plurality of gonio-effect pigments; wherein the empirical dataset is generated by;

obtaining gonio-effect pigment reflectance data from the plurality of gonio-effect pigments, the gonio-effect pigment reflectance data comprising a plurality of reflectances from a plurality of reflection angles for each of the plurality of gonio-effect pigments; and

calculating gonio-effect pigment pseudo-electrostatics data from the gonio-effect pigment reflectance data for each of the plurality of gonio-effect pigments, wherein calculating the pseudo-electrostatics data comprises treating the reflectances obtained for each of the plurality of gonio-effect pigments obtained at each of the plurality of reflection angles as point charges and applying Coulomb's Law;

obtaining, from a spectrophotometer, target coating reflectance data from the target coating, the target coating reflectance data comprising a plurality of reflectances from a plurality of reflection angles from the target coating;

calculating, using a processor, target coating pseudo-electrostatics data from the target coating reflectance data for the target coating, wherein calculating the pseudo-electrostatics data comprises treating the reflectances obtained for the target coating obtained at each of the plurality of reflection angles as point charges and applying Coulomb's Law; and

generating, using the processor, a coating pigmentation that is the same or substantially similar in appearance to the target coating based on the gonio-effect and

target coating pseudo-electrostatics data, wherein generating the coating pigmentation comprises:

empirically correlating the target coating pseudo-electrostatics data calculated for the target coating to the gonio-effect pseudo-electrostatics data calculated for the empirical dataset and predicting at least one texture feature of the target coating based on the correlating.

3. The method of claim 2, wherein predicting at least one texture feature of the target coating based on correlating comprises predicting, using at least one empirical calculation, at least one texture feature based on the correlating.