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; and

calculating virtual gonio-effect pigment colour response data from the gonio-effect pigment reflectance data for each of the plurality of gonio-effect pigments, wherein calculating the virtual gonio-effect pigment colour response data comprises applying at least one of Kepler's laws of planetary motion equation and at least one derivation of at least one of Kepler's laws of planetary motion equation, wherein the virtual gonio-effect pigment colour response data includes one or more eccentricity values, semi-latus return values, angular velocity values, mean motion values, areal velocity values, orbital period, and major axis values; 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;

calculating virtual target coating colour response data from the target coating reflectance data, wherein calculating the virtual target coating colour response data comprises applying at least one of Kepler's laws of planetary motion equation and at least one derivation of at least one of Kepler's laws of planetary motion equation, wherein the virtual target coating colour response data includes one or more eccentricity values, semi-latus return values, angular velocity values, mean motion values, areal velocity values, orbital period, and major axis values; and

generating, using the processor, based on the virtual gonio-effect colour response data and the virtual target coating colour response data, the gonio-effect coating pigmentation of the target coating, the gonio-effect coating pigmentation

being the same or substantially similar in appearance to the target coating, wherein generating the gonio-effect coating pigmentation comprises:

comparing the calculated virtual target coating colour response data to the virtual gonio-effect pigment colour response data stored within the empirical dataset.

2. A system according to claim 1, wherein comparing the calculated virtual target coating colour response data comprises correlating the virtual target coating colour response data to the virtual gonio-effect colour response data and predicting at least one texture feature of the target coating based on the correlating.

3. A system according to claim 2, wherein correlating the virtual target coating colour response data to the virtual gonio-effect colour response data comprises empirically correlating the virtual target coating colour response data to the virtual gonio-effect colour response data.

4. A system according to claim 2 or 3, wherein predicting at least one textural feature of the target coating based on the correlating comprises predicting, using at least one empirical calculation, at least one texture feature of the target coating based on the correlating.

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

accessing, from a database, an empirical dataset stored in 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; and

calculating virtual gonio-effect pigment colour response data from the gonio-effect pigment reflectance data for each of the plurality of gonio-effect pigments, wherein calculating the virtual gonio-effect pigment colour response data comprises applying at least one of Kepler's laws of planetary motion equation and at least one derivation of at least one of Kepler's laws of planetary motion equation, wherein the virtual gonio-effect pigment colour

response data includes one or more eccentricity values, semi-latus return values, angular velocity values, mean motion values, areal velocity values, orbital period, and major axis values;

obtaining, from a spectrophotometer, target coating reflectance data from the target coating;

calculating virtual target coating colour response data from the target coating reflectance data, wherein calculating the virtual target coating colour response data comprises applying at least one of Kepler's laws of planetary motion equation and at least one derivation of at least one of Kepler's laws of planetary motion equation, wherein the virtual target coating colour response data includes one or more eccentricity values, semi-latus return values, angular velocity values, mean motion values, areal velocity values, orbital period, and major axis values; and

generating, using a processor, based on the virtual gonio-effect colour response data and the virtual target coating colour response data, the gonio-effect coating pigmentation of the target coating, the gonio-effect coating pigmentation being the same or substantially similar in appearance to the target coating, wherein generating the gonio-effect coating pigmentation comprises:

comparing, using the processor, the calculated virtual target coating colour response data to the virtual gonio-effect pigment colour response data stored within the empirical dataset.