

determining a set of color coordinates for pixels in the at least a portion of the pixels; and,

comparing the color coordinates to a set of boundaries for a valid color area.

**30.** A method for authentication of a document, the method comprising:

generating a color image of the document, the color image comprising pixels, the document comprising at least one security feature comprising at least one of security particles, threads, ribbons, discs, planchets, fluorescent printing and fibers;

comparing the color of at least a portion of the pixels of an image of the at least one security feature to at least one predetermined color in a first comparison test;

determining at least one morphological aspect for the at least a portion of the pixels of the at least one security feature by operation of a morphological determination algorithm, the at least one morphological aspect comprising at least one of shape information, size information, thickening information, thinning information and connected components information;

comparing the at least one morphological aspect of the at least a portion of the pixels of the at least one security feature to at least one predetermined morphological value in a second comparison test; and

authenticating the document if the first comparison test and the second comparison test are successful.

**31.** A system for authentication of a document, the system comprising:

a source of authentication data comprising authentic color information and morphological aspect information, the authentication data derived from at least one color

image of at least one authentic document comprising at least one set of security features, the morphological aspect information of the at least one set of security features of the authentic document is determined by operation of a morphological determination algorithm, the morphological aspect information of the authentic document comprises at least one of shape information, size information, thickening information, thinning information and connected components information, the security features of the authentic document comprising at least one of security particles, threads, ribbons, discs, planchets, fluorescent printing and fibers;

an imaging sub-system for producing a color image of the substrate that is to be authenticated, the document that is to be authenticated comprises at least one set of security features, the at least one set of security features of the authentic document comprising at least one of security particles, threads, ribbons, discs, planchets, fluorescent printing and fibers; and

a processor coupled to the source of authentication data and coupled to the imaging sub-system, the processor adapted for comparing color information and morphological aspect information of the at least one set of security features of the color image of the document that is to be authenticated to the authentication data and determining the authenticity of the document, the morphological aspect information of the at least one set of security features of the color image of the document that is to be authenticated comprises at least one of shape information, size information, thickening information, thinning information and connected components information.

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