## Summary

~~According to one aspect, t~~The present disclosure may relates to a method for enhancing the abrasion resistance (and durability) of a coating comprising acid-sintered silica nanoparticles coated onto a substrate, the method comprising the step of applying a primer coating (composition) comprising an organofunctional silane to the substrate prior to the step of applying the coating comprising acid-sintered silica nanoparticles to said substrate. In one aspect, there is provided a method for enhancing the abrasion resistance of a coating comprising acid-sintered silica nanoparticles coated onto a substrate, the method comprising the step of applying a primer coating comprising an organofunctional silane to said substrate prior to the step of applying said coating comprising acid-sintered silica nanoparticles to said substrate, with the exception that the organofunctional silane is different from beta-aminoethyl-gamma-aminopropyltrimethoxysilane

~~In another aspect, t~~The present disclosure may also be ~~is~~ directed to a coating assembly comprising a substrate and a silica nanoparticle coating comprising acid-sintered silica nanoparticles thereon, wherein the coating assembly further comprises a primer coating comprising an organofunctional silane in-between the substrate and the silica nanoparticle coating comprising acid-sintered nanoparticles. In another aspect, there is provided a coating assembly comprising a substrate and a silica nanoparticle coating comprising acid-sintered silica nanoparticles thereon, wherein said coating assembly further comprises a primer coating comprising an organofunctional silane in-between said substrate and said silica nanoparticle coating comprising acid-sintered nanoparticles, with the exception that the organofunctional silane is different from beta-aminoethyl-gamma-aminopropyltrimethoxysilane.

According to still another aspect ~~of the present disclosure~~, ~~it~~ there is provided a coated article comprising a support and a coating assembly as described above thereon.

The ~~In yet another aspect, the~~ present disclosure may also be ~~is~~ directed to the use of a primer coating comprising an organofunctional silane for imparting abrasion resistance and/or durability to a silica nanoparticle coating comprising acid-sintered silica nanoparticles coated onto a substrate. In yet another aspect, there is provided use of a primer coating comprising an organofunctional silane for imparting abrasion resistance and/or UV-stability and/or durability to a silica nanoparticle coating comprising acid-sintered silica nanoparticles coated onto a substrate, with the exception that the organofunctional silane is different from beta-aminoethyl-gamma-aminopropyltrimethoxysilane.

## Detailed description

According to one aspect, the present disclosure relates to a method for enhancing the abrasion resistance (and durability) of a coating comprising acid-sintered silica nanoparticles coated onto a

substrate, the method comprising the step of applying a primer coating (composition) comprising an organofunctional silane to the substrate prior to the step of applying the coating comprising acid-sintered silica nanoparticles to the substrate.

According to another aspect, the present disclosure relates to a method for enhancing the abrasion resistance (and durability) of a silica nanoparticle coating comprising acid-sintered silica nanoparticles coated onto a substrate, the method comprising the step of applying a primer coating comprising an organofunctional silane in-between the substrate and the coating comprising acid-sintered silica nanoparticles.

Suitable primer coating compositions for use herein comprise an organofunctional silane. In the context of the present disclosure, the expression "organofunctional silane" is meant to refer to a silane that comprises at least one organic ligand that possesses reactive chemical functionality. Suitable organofunctional silanes for use herein may commonly be referred to as silane coupling agents or silane adhesion promoters by those skilled in the art.