CLAIMS

What is claimed is:

1. A method of supplying a corrosion inhibitor to a metal, comprising:

forming a nanostructure carrier configured as an insert on a metal component;

impregnating the nanostructure carrier with a corrosion inhibitor to form a corrosion inhibitor / nanostructure carrier combination;

placing ~~a~~ the corrosion inhibitor / nanostructure carrier combination in the vicinity of ~~a~~ the metal component;

wherein the corrosion inhibitor / nanostructure carrier combination is capable of releasing the corrosion inhibitor.

~~2. The method of claim 1, further comprising:~~

~~attaching a corrosion inhibitor to a nanostructure carrier forming a corrosion inhibitor and nanostructure carrier combination.~~

~~3~~2. The method of claim 1, further comprising:

releasing the corrosion inhibitor from the corrosion inhibitor / nanostructure carrier combination.

~~4. The method of claim 1, wherein the corrosion inhibitor / nanostructure carrier combination is combined with a lubricant.~~

~~5. The method of claim 1, wherein the corrosion inhibitor / nanostructure carrier combination is combined with a coating.~~

~~6. The method of claim 1, wherein the corrosion inhibitor / nanostructure carrier combination is placed within the matrix of the metallic surface.~~

~~7. The method of claim 6, wherein the corrosion inhibitor is released upon normal wear of the metallic surface.~~

~~8~~3. The method of claim 1, wherein the corrosion inhibitor / nanostructure carrier combination is located within a solid encapsulated bearing.

~~9~~4. The method of claim 1, wherein the corrosion inhibitor is released from the corrosion inhibitor / nanostructure carrier combination upon a triggering condition.

~~10~~5. The method of claim 1, wherein the corrosion inhibitor is released from the corrosion inhibitor / nanostructure carrier combination under standard operating conditions.

~~11~~6. The method of claim 1, wherein the corrosion inhibitor is released from the corrosion inhibitor / nanostructure carrier combination under a change in pressure.

~~12~~7. The method of claim 1, wherein the corrosion inhibitor is released from the corrosion inhibitor / nanostructure carrier combination under a change in temperature.

~~13~~8. The method of claim 1, wherein the corrosion inhibitor is released from the corrosion inhibitor / nanostructure carrier combination under a change in pH.

~~14~~9. The method of claim 1, wherein the corrosion inhibitor is released from the corrosion inhibitor / nanostructure carrier combination over time.

~~15~~10. The method of claim 1, wherein the corrosion inhibitor / nanostructure carrier combination is located adjacent to an oilfield tool.

~~17~~11. The method of claim ~~15~~10, wherein the oilfield tool is chosen from the group consisting of a drill bit, a rotor, a stator, a motor, a pump, a drive shaft assembly, a dump sub, a bearing assembly, a blowout preventer, a packer, drill pipe, tubing, casing, a completion tool, a production tool, a fishing tool, an agitator, a stabilizer, a centralizer, and combinations thereof.

~~18~~12. ~~The~~ A method of ~~claim 1~~ supplying a corrosion inhibitor to a metal, comprising:

placing a corrosion inhibitor / nanostructure carrier combination in the vicinity of a metal;

wherein the corrosion inhibitor / nanostructure carrier combination is capable of releasing the corrosion inhibitor, and

wherein the corrosion inhibitor / nanostructure carrier is located within an elastomer.

~~19~~13. The method of claim ~~18~~12, wherein the elastomer is permeable to the corrosion inhibitor and capable of releasing the corrosion inhibitor from the elastomer under standard operating conditions.

~~20~~14. The method of claim ~~18~~12, wherein the elastomer is non-permeable to the corrosion inhibitor under standard operating conditions and permeable to the corrosion inhibitor under imposed conditions.

~~21~~15. The method of claim ~~18~~12, wherein the elastomer is permeable to the corrosion inhibitor under a change in pressure.

~~22~~16. The method of claim ~~18~~12, wherein the elastomer is permeable to the corrosion inhibitor under a change in temperature.

~~23~~17. The method of claim ~~18~~12, wherein the elastomer is permeable to the corrosion inhibitor under a change in pH.

~~24~~18. The method of claim ~~18~~12, wherein the elastomer is increasingly permeable to the corrosion inhibitor over time.

~~25~~19. A ~~composition for inhibiting~~ corrosion inhibiting device~~,~~ comprising:

a ~~nanostructure~~ carrier comprising a nanostructure, the carrier configured for at least partial embedment in a surface of a tool; and

~~having~~ a corrosion inhibitor ~~attached forming a corrosion inhibitor / nanostructure carrier combination~~ impregnated in the carrier,

wherein the corrosion inhibitor is configured to be released into the environment adjacent the surface of the tool.

~~26~~20. The ~~composition~~ device of claim ~~25~~19, wherein the nanostructure is chosen from the group comprising: graphines, nanotubes, nanohorns, nanolattice, and combinations thereof.

~~27. The composition of claim 25, wherein the corrosion inhibitor / nanostructure carrier combination is located adjacent to an oilfield tool.~~

~~28~~21. The ~~composition~~ device of claim ~~27~~19, wherein the ~~oilfield~~ tool is chosen from the group consisting of a drill bit, a rotor, a stator, a motor, a pump, a drive shaft assembly, a dump sub, a bearing assembly, a blowout preventer, a packer, drill pipe, tubing, casing, a completion tool, a production tool, a fishing tool, an agitator, a stabilizer, a centralizer, and combinations thereof.

~~29~~22. A method of preventing corrosion, comprising:

combining a corrosion inhibitor with a nanostructure carrier;

containing the corrosion inhibitor and the nanostructure carrier within an elastomer; and

placing the elastomer containing the corrosion inhibitor in the vicinity of a surface subject to corrosion;

wherein the elastomer is permeable to the corrosion inhibitor and capable of releasing the corrosion inhibitor from the elastomer.

~~30~~23. The method of claim ~~29~~22, wherein the elastomer is located adjacent to an oilfield tool.

~~31~~24. The method of claim ~~30~~23, wherein the oilfield tool is chosen from the group consisting of a drill bit, a rotor, a stator, a motor, a pump, a drive shaft assembly, a dump sub, a bearing assembly, a blowout preventer, a packer, drill pipe, tubing, casing, a completion tool, a production tool, a fishing tool, an agitator, a stabilizer, a centralizer, and combinations thereof.