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~~ a nanostructure carrier with a corrosion inhibitor to form a corrosion inhibitor / nanostructure carrier combination;

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

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

2. The method of claim 1, further comprising:

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

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

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

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

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

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

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

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

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

11. The method of claim 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.

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

placing a corrosion inhibitor / nanostructure carrier combination ~~in the vicinity of~~adjacent to 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.

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

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

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

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

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

24. The method of claim 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.