Claims

1. A nanostructured interface comprising:

   a conductive film or foils; and

   arrays of conductive nanowires disposed on both sides of the conductive film or foil.

2. The nanostructured interface of claim 1 further comprising:

   an adhesive polymer interspersed within the nanowires in each array, forming a composite film.

3. The nanostructured interface of claim 1 wherein the nanowires contact with an object surface by squeezing out extra adhesive polymer.

4. The nanostructured interface of claim 1 wherein the metal foil and the nanowires are composed of copper.

5. The nanostructured interface of claim 1 wherein the nanowires are between 10 nm and 30000 nm in diameter.

6. The nanostructured interface of claim 1 wherein the nanowires are between 5 μm and 100 μm in height.

7. The nanostructured interface of claim 1 wherein the nanowires cover between 5% and 50% of each side of the metal foil.

8. The nanostructured interface of claim 1 wherein the metal foil is between 1 μm and 100 μm in thickness.

9. The nanostructured interface of claim 2 wherein the adhesive polymer is a low-viscosity resin or glue or epoxy.

10. The nanostructured interface of claim 2 wherein the composite film bonds to surfaces of target objects after the adhesive polymer is cured.