WHAT IS CLAIMED IS:

1. A method comprising:

cold spraying first particles and second particles of a metal alloy on at least a portion of a surface of a substrate to form a deposit on the surface of the substrate,

wherein the first particles form a first component of the deposit and the second particles form a second component of the deposit,

wherein cold spraying comprises accelerating the first particles and the second particles toward the surface of the substrate without creating thermally induced changes to a microstructure of the respective first and second particles, and

wherein the first and second particles have been subjected to different heat treatments prior to cold spraying.

2. The method of claim 1, wherein the first particles comprise at least one of precipitation hardened particles, quenched hardened particles, or tempered particles.

3. The method of claim 1 or 2, wherein a volume percentage of the first component in the deposit is between about 1% and about 99%.

4. The method of any preceding claim, wherein the metal alloy comprises at least one of a Mg-based alloy, a Ni-based alloy, a Ti-based alloy, a Fe-based alloy, an Al-based alloy, a Co-based alloy, a Ta-based alloy, a Nb-based alloy, a Zn-based alloy, a Cr-based alloy, or a Cu-based alloy.

5. The method of any preceding claim, wherein the surface comprises a cracked surface, and wherein forming the deposit further comprises filling the cracked surface with the deposit.

6. The method of claim 1, wherein a tensile strength of the first particles is at least about twice as high as a tensile strength of the second particles.

7. The method of any preceding claim, wherein an elongation of the first particles is at least about 50% greater than an elongation of the second particles.

8. The method of any preceding claim, wherein the metal alloy comprises a first composition, and wherein the method further comprises forming the substrate from a second composition, different from the first composition.

9. The method of any preceding claim, wherein the first and second particles and the substrate are not subject to a heat treatment during the cold spraying that would further modify thermomechanical properties of the first and second particles and the substrate.

10. The method of claim 8, wherein the second composition comprises the metal alloy that has not been subjected to a heat treatment prior to cold spraying.