What is claimed is:

1. A conductive ink for application to a semiconductor for use as a photovoltaic cell comprising a glass frit; a conductive species; an organic medium; and one or more metallo-organic components that form metal oxides upon firing, wherein the glass frit and metallo-organic components are combined in a paste adapted to be applied to a substrate, the ink adapted to reduce series resistance of the photovoltaic cell to the same or greater degree as inks that do not include metallo-organic components, wherein the one or more metallo-organic components further comprise a bismuth metallo-organic compound.

2. The ink of claim 1, wherein the one or more metallo-organic components are present in an amount sufficient to form metal oxide in an amount of at least about 1% by weight upon firing.

3. The ink of claim 1, wherein the one or more metallo-organic components are present in an amount less than about 40% by weight.

4. The ink of claim 3, wherein the one or more metallo-organic components are present in an amount less than about 15% by weight.

5. The ink of claim 4, wherein the one or more metallo-organic components are present in an amount less than about 8% by weight.

6. The ink of claim 1, wherein the bismuth metallo-organic is present in an amount about 4% by weight.

7. The ink of claim 1, wherein the glass frit comprises one or more of bismuth oxide, silica, boron oxide tellurium dioxide, and combinations thereof.

8. The ink of claim 1, wherein upon application of the ink to an anti -reflection coating disposed on the substrate, the conductive ink is capable of penetrating the anti- reflection coating to form ohmic contact with the substrate.

9. A photovoltaic cell comprising a semiconductor substrate; an anti-reflection coating; and conductive grid lines formed from a conductive ink according to any of claims 1-8 wherein the ink has been processed to remove the organic medium and sinter the conductive species.

What is claimed is:

1. A conductive ink for application to a semiconductor for use as a photovoltaic cell comprising a glass frit including no intentionally added lead; a conductive species; an organic medium; and one or more metallo-organic components that form metal oxides upon firing, wherein the glass frit and metallo-organic components are combined in a paste adapted to be applied to a substrate, the ink adapted to reduce series resistance of the photovoltaic cell to the same or greater degree as inks that do not include metallo-organic components, wherein the one or more metallo-organic components comprises a bismuth metallo-organic compound and the frit comprises bismuth oxide, wherein the metallo-organic components are present in an amount sufficient to form metal oxide in an amount of at least about 1% by weight upon firing.

2. The ink of claim 1, wherein the metallo-organic components are present in an amount less than about 40% by weight.

3. The ink of claim 2, wherein the metallo-organic components are present in an amount less than about 15% by weight.

4. The ink of claim 3, wherein the metallo-organic components are present in an amount less than about 8% by weight.

5. The ink of claim 1, wherein the bismuth metallo-organic is present in an amount about 4% by weight.

6. The ink of claim 1, wherein the glass frit further comprises one or more of silica, boron oxide, tellurium dioxide, and combinations thereof.

7. The ink of claim 1, wherein upon application of the ink to an anti-reflection coating disposed on the substrate as part of a photovoltaic cell, the conductive ink is capable of penetrating the anti-reflection coating to form ohmic contact with the substrate.

8. The conductive ink of claim 1, wherein the conductive species comprises silver.

9. The conductive ink of claim 1, wherein the frit is substantially free of Na_2O.

10. The conductive ink of claim 9, wherein the frit further comprises one or more of silica, boron oxide, tellurium dioxide, and combinations thereof.

11. The conductive ink of claim 10, wherein the frit is substantially free of Na_2O.

12. The conductive ink of claim 11, wherein the conductive species comprises silver.