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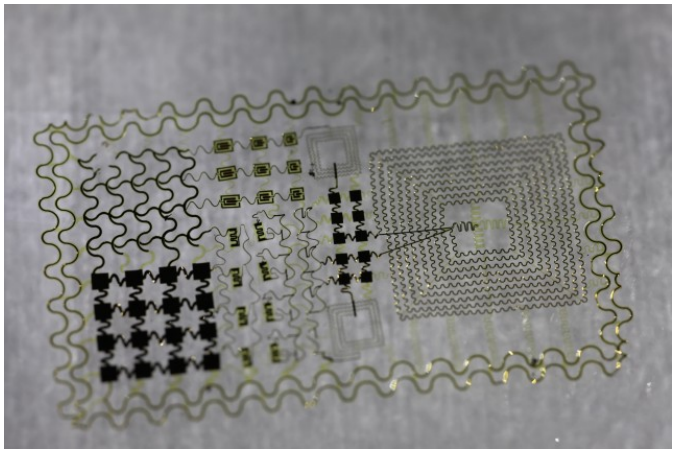
Is transparent the colour (or lack thereof, rather) of future semiconductors? The combination of metal oxides and ultraviolet (UV) light might pave the road to such electronics, according to a team of scientists.



Current non-transparent semiconductors are based on silicon, gallium arsenide (GaAS) and other opaque materials. Metal oxide semiconductors, on the other hand, are not only transparent but also very efficient. However working on metal oxides demands very high temperatures (350C)-- too high for the plastic substrates flexible devices demand.

Now Yong-Hoon Kim and colleagues find a means of working on metal oxides at room temperatures, using UV irradiation. The team chemically activated metal particles in a chemical solution with intense UV light, creating a metal oxide film over the solution.

The process still has some issues-- the high intensity mercury UV lamp the researchers use cause the metal oxide film to heat up to 150C. Still, it is more efficient than current metal oxide creation methods, such as the "sol-gel" technique.

Metal oxide semiconductors are transparent (which is awesome), have a high electric charge carrier density (meaning efficiency at carrying current) and are "amorphous solids"-- making them ideal for flexible electronics for use in medical, transportation and scientific applications. Or the transparent bendy devices of the future!

Go Flexible Metal-Oxide Devices (Nature )