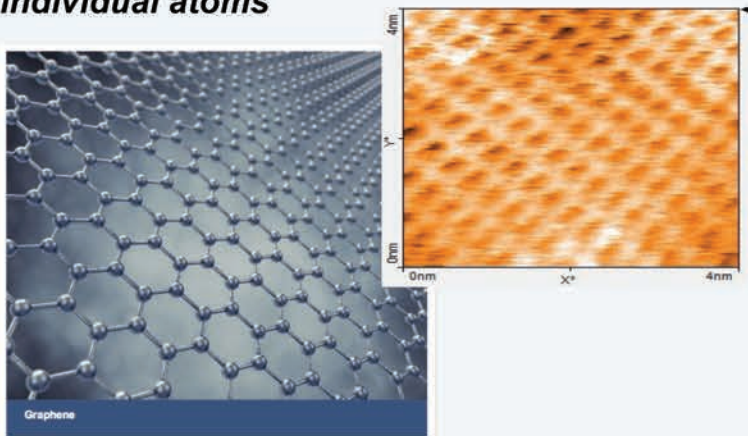


# GRAPHENE

Scintacor Ltd in partnership with university College London, investing in future technology

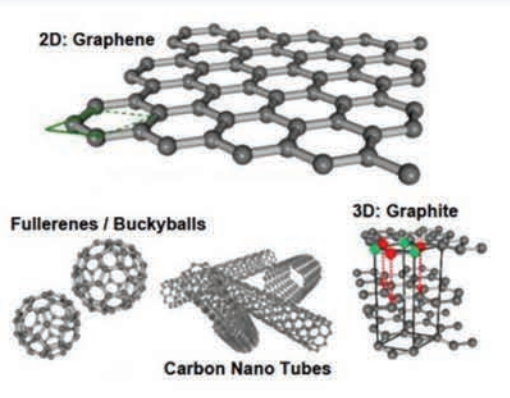
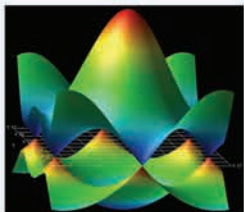


Scanning Tunneling Microscope picture of our Graphene, showing individual atoms



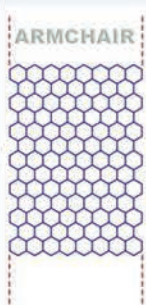
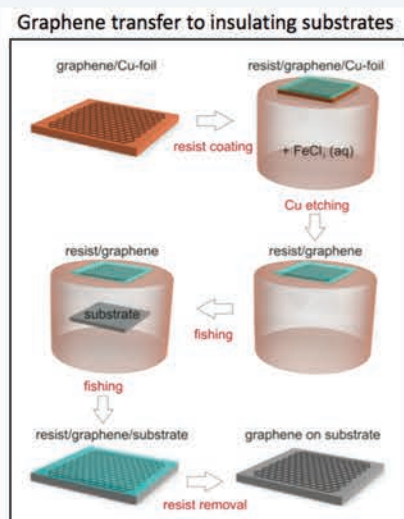
**Graphene** A single atomic layer of carbon, discovered in Britain (Geim and Novoselov, Nobel Prize in Physics, 2010)

**Inexpensive source material** harvested from graphite (pencil lead) or grown from methane gas



The Physics has been done – its time to Engineer some Devices and move towards products

The atomic structure of graphene means that electrons can move with little, or even no, effective mass – that's means they can move very very quickly - this is called **High Carrier Mobility**



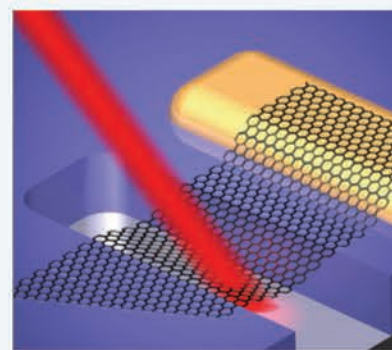
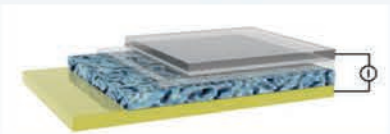
**Graphene reveals astonishing properties** Its tensile strength (bonding strength from atom to atom) is 217 times higher than that of steel and it is harder than diamonds - at normal temperature and pressure, it exhibits attributes that makes it nearly a superconductor - its heat and electric conductivity is 100x + better than that of copper

Optically transparent, highly conductive and flexible - can be deposited on plastic sheets

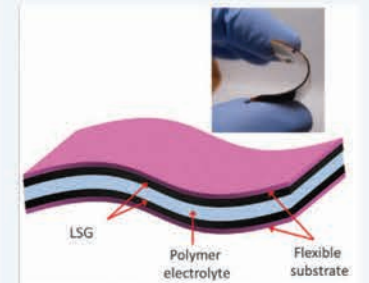
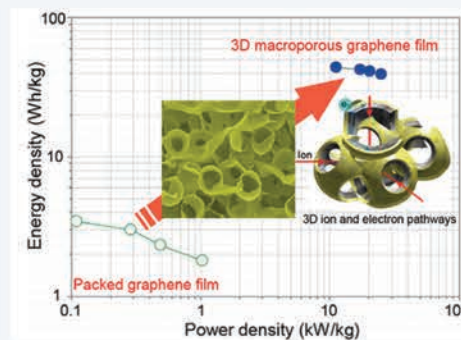


Transparent electrodes are needed in flat screen technology – existing material used is toxic and the worlds supply of the indium component becoming scarce

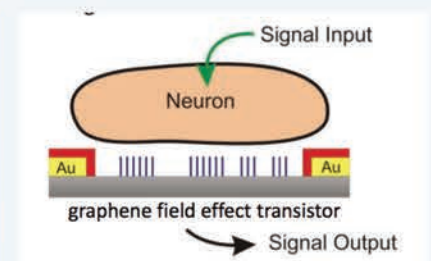
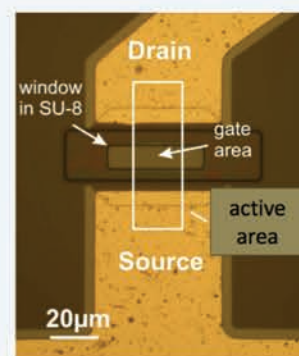
Graphene Boosts Efficiency of Next-Gen Solar Cells



New forms of electronic devices are envisaged – including ultra-fast transistors that could lead to more powerful computing



Integrating graphene with other advanced carbons (nanodiamonds and carbon nano-onions) for flexible mobile energy needs – supercapacitors and batteries



New biosensors and implantable devices

“The integration of graphene with other advanced carbon forms for device applications and bioengineering”

A proposal submitted to this months EPSRC call in “Graphene Engineering” by UCL with Scintacor Ltd **Under Consideration**

