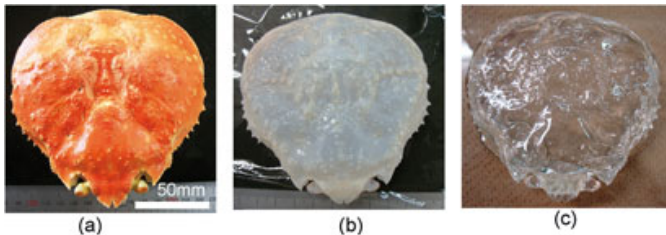


Crab Shells: the Secret to Future Displays?

Written by Marco Attard
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Researchers in Kyoto University, Japan manage to turn a crab shell transparent-- creating a "transparent nanocomposite sheet" with potential future applications in flat panel display, solar cell and bendy screen manufacture.



The process involves treating the crab shell with a mixture of hydrochloric acid, sodium hydroxide and ethanol. The chemicals remove all minerals, proteins, lipids, fats and pigments from the shell-- leaving translucent chitin.

The chitin is then immersed in an acrylic resin monomer, in order to create a completely see-through version of what once a living crab's shell.

One can create an optically transparent sheet using the same process, by crushing the the crab shell chitin and spreading it into a paper-thin sheet before applying the monomer treatment. The resulting panel is 10x more resistant to heat than than traditional glass-fibre epoxies, and has high light transmittance-- making it ideal for the bendable displays and solar cells of the future.

Chitin is also abundant in nature, found not only in seafood restaurants (left behind after a meal of crab, lobster or shrimp) but also in insects, spiders and even fungi.

Go [How To Make a Crab Shell See Through \(The Royal Society of Chemistry\)](#)