

Under the microscope #7

February 10 2012

In this video Dr Ingrid Graz shows us a thin layer of gold on top of rubber. Cracks in the gold allow it to stretch and we can use this for stretchable electronics.

Under the [Microscope](#) is a [collection of videos](#) that show glimpses of the natural and man-made world in stunning close-up.

Dr. Graz: “Imagine a future mobile phone that can be wrapped around your wrist or an MP3 player that is integrated in your T-shirt. Stretchable electronics is a new evolution of electronics – the idea behind is to create electronic devices that can be rolled, flexed, deformed and even stretch like a rubber band. To enable stretchable electronics we use rubber such as silicone coated with a very [thin layer](#) of [gold](#). The gold serves as stretchable conductor and can be elongated to twice its original length without electrical failure. The secret behind the stretchability lies within the microstructure. Tiny [cracks](#) in the film open up when it is stretched without damaging the film. This image shows a silicone rubber with a gold layer and an additional silicone layer to protect the electrode.”

The image is about 3x3mm.

Provided by University of Cambridge

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