

# Highlight: Capturing quasiparticles

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(PhysOrg.com) -- A physics research team from the University of St Andrews and Cornell University in the USA has managed to 'photograph' the traces left by orbiting electrons in a special oxide material, and their observations could form the basis for the future of electronic technology.

These [electrons](#) are not restricted to spending their life round a single atom, but are able to collaborate with other electrons to form delicate and transient objects known as 'quasiparticles'.

In a series of world-firsts published in the journal *Nature Physics*, the team has produced images of the patterns that these quasiparticles form.

Co-leaders of the project, Professors Andy Mackenzie and Seamus Davis, commented: "This publication is the first from a collaboration that we established in 2006. The experiment is a bit like zooming in with a camera, but our zoom lens can track details one billionth of a millimetre across.

"The results we have achieved so far are only the tip of the iceberg. The really exciting thing is the possibilities they open up. In the long term, we are likely to uncover new properties that will form the basis for future electronic technologies."

More information: Heavy *d*-electron quasiparticle interference and real-space [electronic structure](#) of  $\text{Sr}_3\text{Ru}_2\text{O}_7$ , [Nature Physics](#), Published online: 13 September 2009; [doi:10.1038/nphys1397](https://doi.org/10.1038/nphys1397)

Provided by University of St Andrews

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