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Cortical transfer

Studying how the human brain develops and functions is challenging, not least because access to living human brain tissue is understandably limited. Human brain organoids, rounded generated from stem cells, have proved valuable in this respect by providing a way to study living neural cells. But how models will have limitations: they are typically not integrated with other brain structures and offer limited insight into circuit-level or behavioural consequences. In this week's Nature, Fiona Doetsch and colleagues present an experimental model designed ... show all

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How to mobilize the scale science needed in a crisis
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How digital breakdowns affect supply chains — and endanger the global economy
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Brain organoids grafted into cortex free mice will advance human brain research
Cell-based models of the human cortex transplanted into mice produce neurons that can reconstitute in vitro, and could enable scientists to link brain injury to behaviour.
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2D semiconductor aims to turbocharge development of high-performance electronics
An ultrathin semiconductor at the nanoscale device by using a simple 2-step method. It might be the next big step for the next generation electronic devices.
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A fruit fly protein thought only to be an enzyme aids in fruit flies' response to nutritional deficiency in both development and adulthood, resulting in lifespan extension.
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A dual-precursor chemical system is used to achieve wafer-scale epitaxy growth of boron carbon nitride, a high-performance p-type semiconductor, for potential integration in efficient 2D materials for electronics.
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Organic two-dimensional van der Waals heterostructures
Two-dimensional van der Waals heterostructures are promising for applications in novel devices, such as nanoscale transistors, but are typically made from inorganic materials. Here, we report the synthesis of organic two-dimensional van der Waals heterostructures from organic building blocks.
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Spontaneously deterministic nucleation of 2D semiconductors by etching flux
Etching flux, combined with a single-crystal substrate, can control the nucleation of semiconductors to grow wafer-scale single-crystalline films. A single nucleation event, expanding semiconductor deposition from controlling where nanoscale grow to controlling where and how crystals can begin to form.
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Increasing CO2 levels fertilize C4 grass production
Rising atmospheric CO2 levels have been shown to increase the yields of southern African savanna observations, an increase is biomass production by 15 percent under the CO2 levels.
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Pervasive phosphorylation by phage T7 kinase disrupts bacterial defences
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A tissue of allometric modulation is a molecular glue for IL4R dimerization
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