# Transient Electronics

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A remarkable feature of the modern integrated circuit is its ability to operate in a stable fashion, with almost perfect reliability over long periods of time. Recently developed classes of advanced electronic materials create an opportunity to engineer the opposite outcome, in the form of devices that are physically transient, with an ability to disappear completely in a controlled, programmed manner. The enabled applications range from non-recoverable classified devices to bio-resorbable medical implants – none of which would be possible with technologies that exist today. This talk summarizes recent work on this physically 'transient' type of electronics, from basic advances in materials chemistry, to fundamental studies of dissolution reactions, to engineering development of complete sets of device components, sensors and integrated systems, and translational efforts in manufacturing. Biodegradable nerve stimulators, intracranial monitors and pacemakers provide some recent demonstrations of devices that address unmet clinical needs, with relevance to battlefield medicine and rehabilitation.