

## **Alternatives to silicon: Will our best be anywhere good enough in time?**

M. J. Kelly  
*University of Cambridge, U.K.*

With reference to several projects, I will discuss the progress being made towards achieving manufacturable processes on the nanometre scale: in the case of III-V materials, these processes have to be foundry compatible.

- Tunnel device reproducibility is not yet good enough;
- Quantum dot volumes are not sufficiently under control;
- Implantation is not longer adequate to modify materials;
- Split gate devices are not reproducible;
- We are going to need  $10^{13}$  switches to extrapolate beyond CMOS.

The longer CMOS continues, the harder it is going to be to extrapolate.