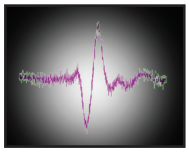
in brief

NEW GENERATION

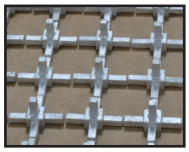
PAGE 1171 Researchers in Germany have proposed a technique for generation of UWB signals that uses direct modulation of semiconductor lasers and optical filtering. Their device is capable of generating both monocycle and doublet pulses and offers a simple, compact and low-cost combination of UWB and optical access networks.



UWB and optical networks improve generated signal diversity

PLASTERING SIGNALS

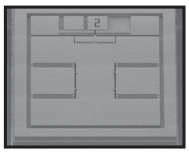
PAGE 1117 A 3D printing technique for fabrication of frequency selective structures for built-up environments has been developed by researchers in the UK. The cores of the elements are fabricated using a material based on commercially available plaster, and so offer a straightforward approach to the control of electromagnetic wave propagation in buildings.



3D printing allows for construction of frequency selective surfaces that can be used in buildings

INERTIA AND BOUNCE

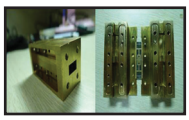
PAGE 1167 A novel inertial micro-switch capable of prolonging contact time and reducing the contact-bouncing effect has been designed and manufactured by researchers in China. Solving an important problem that has plagued inertial sensors for several years, this design can be used in a wide range of applications such as accessories, automobiles and military systems.



Reducing the bouncing effect in micro-switches opens up applications in a number of systems

MULTIPLE DIVISION

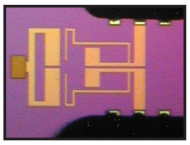
PAGE 1160 Wide bandwidth and low insertion loss are important properties for millimetre wave systems, and researchers in China have presented a wideband, low loss millimetre-wave quasi-optical low-loss power divider based on a dipole antenna. The antenna array is inserted in the E-plane of a rectangular waveguide to implement the power-dividing function



Antennas can be combined with rectangular waveguides to create effective power dividers

LENGTH CHANGING

PAGE 1157 A dual-band bandpass filter that can be used at two unlicensed bands, 60 GHz and 77 GHz, has been constructed on a GaAs substrate by researchers in Taiwan. The dual-band filter allows more flexibility in the selection of operational frequencies and the fractional bandwidth by adjusting the lengths of the two sets of resonators.



GaAs based bandpass filters offer adjustable and flexible performance

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