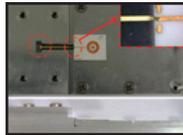


in brief

GUARDING GAINS

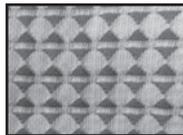
PAGE 1382 Researchers in Korea have designed and built a broadband antenna structure with high gain in the millimetre wave band. By introducing a guard ring resonator to a conventional patch antenna, the propagation of surface wave to the substrate edge was greatly reduced, and so the gain was increased.



A guard ring resonator increases antenna gains

KNITWEAR SELECTION

PAGE 1386 The first experimental demonstration of a knitted, textile metamaterial has been presented by researchers in the UK. They have reported a low-pass and a high-pass frequency selective surface designed to operate at microwave frequencies for use in on-body communications, body-worn antennas and health sensing systems.



Knitted metamaterials will be used for on-body communications and health monitoring

A FAVOURABLE LIGHT

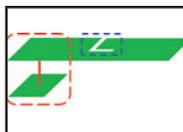
PAGE 1417 In the future, white LEDs are expected to replace conventional bulbs, and **researchers in Italy have developed an efficient means for their manufacture.** In particular, the dye for colour conversion is cheap, compared with inorganic phosphors, exhibits a larger Stokes shift (which means less self-absorption), is not hazardous to health and is easy to dispose of.



Organic dyes make white LEDs more efficient and environmentally sound

REMOTE CHECK-UP

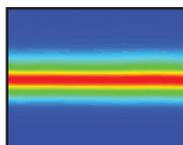
PAGE 1383 Researchers in Japan have created a dual-mode antenna for body-centric wireless communications. The antenna consists of a signal electrode and a ground plane with an embedded L-shaped slit. On- and off-body communications could be achieved making the design ideal for personalised healthcare applications.



Dual-mode antennas are expected to improve personalised healthcare.

FAR AWAY POWER

PAGE 1419 Researchers in Germany have presented results of broad area lateral photonic band crystal lasers with quantum dot active area for the first time. Their laser demonstrates high output powers and simultaneously low vertical far field divergence, and will be of fundamental importance to semiconductor nanostructure as well as laser-diode device technologies.



Quantum dot active areas improve output power and divergence in crystal lasers