

in brief

A SEA VIEW

PAGE 1687 Research from Australia proposes an image restoration method for correction of geometrically warped underwater images. Using an optical flow technique, the method yields better geometric corrections than a single pass process, and the B-spline based technique is efficient at determining translation vectors using the warped sequence. The method has potential for underwater applications in both scientific and military operations.



An image restoration technique for dealing with warping of underwater images

QUICKSILVER

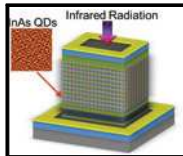
PAGE 1665 In work from Denmark, researchers demonstrate a manufacturing technique for the silver ink screen printing of frequency-reconfigurable antennas with LTE application. The method offers a low cost option for the fabrication of tunable antennas for 4G enabled mobile devices, and could move manufacturing this kind of antenna from a slow, costly copper etching process to cheap and efficient reel-to-reel printing.



Silver ink screen printing of tunable LTE antennas may provide a low-cost alternative in 4G antenna manufacturing

WELL DETECTED

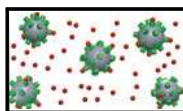
PAGE 1731 Researchers from Korea and Sweden are using p-i-p quantum dots-in-a-well to overcome the large dark current problem that gives rise to degradation in performance of current generation InAs/GaAs quantum dot infrared photodetectors (QDIPs) at temperatures above 150K. QDIPs can be used for components in night vision, weapons detection and medical imaging equipment.



p-i-p quantum dots-in-a-well may overcome dark current problem in current generation QDIPs

SMALLTALK

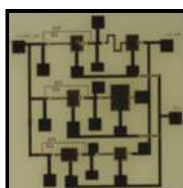
PAGE 1669 Work from the UK proposes the use of minimum energy codes and Hamming codes, with on-off keying modulation, as error correction coding methods to overcome limitations of molecular nanomachines in energy-efficient communication techniques. Results show that both coding methods offer coding gains of several dB with potential applications in synthetic biology and biomedical nanomachines.



Minimum energy codes and Hamming codes using on-off keying modulation may allow energy efficient molecular communications

SWITCHING IT UP

PAGE 1720 Researchers in Canada have presented a chipless RFID tag that uses MEMS switches as programmable elements to enable communications between tags and interrogators. Using a basic MEMS process, the proposed tag can be fabricated and can operate at the conventional UHF band for RFID applications. Elimination of the chip in RFID tags would reduce system implementation costs.



RFID tags using MEMS programmable switches could eliminate the need for costly chips