Apples and oranges
Using a filter setup that incorporates a tissue and load resistance, researchers from the United Arab Emirates have proposed an elegant method for characterising the electrochemical properties of biological tissues. By plotting only the magnitude response, all Cole-Cole parameters which characterise the tissue can be extracted without need for an impedance analyser.

Redundant baselines
Microwave synthetic aperture interferometric radiometers (SAIRs) retrieve the brightness temperature distribution of a thermal source by
measuring its spatial Fourier transform baselines. Researchers from the Netherlands and Italy have developed a technique to enhance the radiometric resolution by increasing the level of redundancy of the baselines over the spatial frequency domain without losing spatial resolution.

**Tuned inductance**
Researchers from the Georgia Institute of Technology in the US have presented a wideband RF voltage-controlled oscillator (VCO) with an inductance tuning circuit. Three bondwire inductor pairs and switches implement a programmable inductor with a tuning range of 0.4 to 1.2 nH, making their design a fundamental solution for ultra-wide frequency VCOs.

**Sensitive interference**
Owing to their small size, flexibility, immunity to electromagnetic interference and capability for remote measurements, photonic crystal fibre (PCF) sensors have shown advantages in detecting changes of pressure, temperature and environmental refractive index. By inducing an extra interfered beam path, a group from China have doubled the maximum sensing range of a PCF interferometer without affecting definition.

**A common source**
Researchers from Poland have proposed a signal source for generating frequencies up to several hundred kHz. The flexibility of their circuit means that tunable modifications can be made. For example, a high-frequency clock may be used as a common source for carrier, modulating and sampling signals.
The twentieth issue of a new-look *Electronics Letters*, bringing you even more about the latest electronics research.

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This unique supplement to *Electronics Letters* contains a mix of contemporary articles, Insight Letters, Landmark Letters and recent technical Letters which explore the past, present and future of silicon photonics.

The cover image is based on the silicon evanescent laser developed by researchers at the University of California Santa Barbara and Intel.

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