WIRELESS ELECTRICITY

DISCOVERY

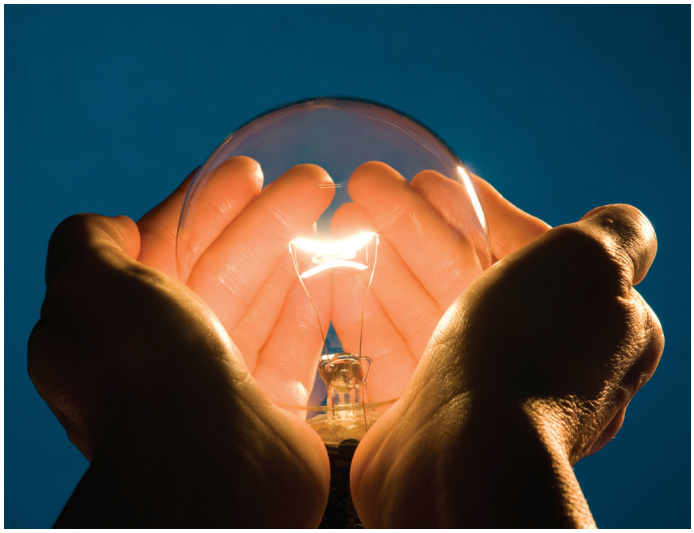
Are the days of “plugging in” electronic devices coming to an end?

These days, even battery-powered devices need to be recharged with cords and wires. But what if we could harness electricity “out of thin air”?

Research into wireless electricity is based on a cool idea: maybe we can transmit electrical power using magnetic resonance instead of wires. Scientists envision a room of the future where devices are powered wirelessly with coils embedded in furniture and carpeting.

INNOVATION

The challenge for wireless electricity is to transfer energy efficiently through fields in a safe, economical way. One potential technology is *resonant energy transfer*, which uses magnetic fields to transfer energy from a “source” to a “load.”



In a typical induction system (an electric toothbrush, for example), the source and load need to be very close to one another. To move the source and load apart takes some extra ingenuity. Resonant energy transfer allows the load to be moved a metre or two from the source. The key to resonant energy transfer is to strongly couple the source and load together using magnetic fields.

To achieve this strong coupling, the magnetic field is carefully tuned so the energy can only be received by a matching antenna attached to the load.

IMAGINATION

Scientists have pondered wireless electricity for more than a century. Imagine a future in which electronic devices always stay powered without needing to be plugged in. The possibilities are endless. How will wireless electricity change your daily life? What new applications will it lead to?