

TECHNOLOGY & COPPER

Copper's electrical conductivity is one of the unique properties that distinguishes it from other metals and makes it such a vital component to current and developing technologies. Copper is present in most of the electronics and technologies we use daily, including:



CELL PHONES: There is approximately .5 oz. of copper in an average cell phone, which is more than all of the other metals present in the phone. As cell phones continue to become more advanced, the amount of copper needed will increase. A team at Ohio University has recently developed an unbreakable touchscreen film comprised of linked copper nanowires – eliminating the common problem of cracked or broken screens. The new material can be bent more than 1,000 times without breaking, doesn't peel, is more conductive, and is cheaper to produce than current touchscreens.

COMPUTERS: Copper is essential to the data path of information computers provide us – it's in the external cables, connectors, printed circuit boards, sockets, lead frames and more. Additionally, copper has started to replace aluminum in computer chips, which has resulted in faster operating

speeds and greater circuit integration. Copper also makes electronics operate more efficiently – increasing the longevity of products.

INTERNET: Copper wire now delivers high speed internet connections (DSL, HDSL, ADSL) which allows for lower-cost networking and communications options than fiber optic cables.

SECURITY: Did you know that copper can also prevent information signals from traveling? The National Security Agency buildings at Fort Meade, Md. are sheathed with copper to prevent unauthorized spying. The windows are fitted with copper screens which block radio waves from penetrating into or escaping from the operations.

MEDICAL: Copper sheathing is used in hospitals to enclose rooms containing sensitive equipment like CAT scan, MRI and X-ray units to prevent problems with emissions of electromagnetic radiation. It is also used in a variety of hospital and medical equipment because of its antimicrobial properties, which kill bacteria within two hours – helping to prevent the spread of infections.

Sources:

Copper Matters, <http://coppermatters.org/copper-facts/>
Copper Development Association, <http://www.copper.org/applications/industrial/DesignGuide/selection/elect02.html>
Mining.com, <http://www.mining.com/copper-nanowire-coating-to-make-smartphone-screens-shatterproof-52964/>
Forbes.com, http://www.forbes.com/sites/robertszcerba/2014/04/10/copper-is-the-new-gold-standard-for-saving-lives/?utm_campaign=forbestwitter&utm_source=twitter&utm_medium=social