

An electrically conductive textile wire is introduced made of plasma metallized Vectran™ core yarn covered by Vectran™ braiding. Electrical conductivity is adjusted by the type and amount of deposited metal and by plying the metallized yarns. Thus a high-strength, ultra-light and flexible wire is produced having a diameter below 1 mm, for example, for data transfer or as capacitive sensor in demanding environments.

# High-Strength Textile Wire



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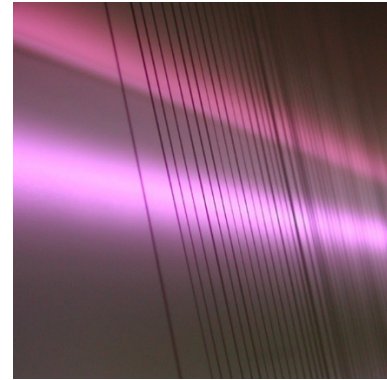
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Within the collaboration between Serge Ferrari Tersuisse and Empa's laboratory for Advanced Fibers an industrially feasible, reel-to-reel plasma process has been developed to metallize various yarn materials with excellent adhesion. Using Vectran™, a manufactured fiber spun from a liquid-crystal polymer, a high strength,

electrically conductive yarn is achieved. The strength can be further enhanced by braiding with uncoated Vectran™ yarn, resulting in a flexible textile wire with a protected and insulated conductive core. Likewise, Aramid, UHMWPE, HT-PET, and other high tenacity yarns can be used for the textile wire.



Find all of our info sheets on fiber and textile research at Empa online: <https://www.empa.ch/web/s401/s402/flyer>