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PHOTONICS IN SMART SENSING NETWORKS

Abstract: Photonics is well established within transmission networks providing unmatched bandwidth transmission over long distances and enabling the internet to go beyond communications and videos alone. This bandwidth allows the network to be smart and, on earth at least, not too slow for the time being... Beyond transmission, photonics is now reaching into optical sensors and instrumentation, working with electrons (de Broglie Wavelength ~ 1 nm), and wireless to both enable and connect portable diagnostics reaching well beyond the laboratory into the field. That combined mobility and unprecedented connectivity offers the possibility of traveling network “super instruments” that can one day map and track disease, other ailments and more across space and over real time. These coming measurement modes, along with rising sophistication and quantity of data, will likely help drive and shape the next stages of transmission backbone development.