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Sommario/riassunto

Tactile sensors are basically distributed sensors which translate mechanical and physical variables and pain stimuli into electrical variables. Contact information is further processed and conveyed to a supervising system. Tactile arrays ought to be mechanically flexible (i. e., conformable to the object it is applied to) and stretchable and tactile information decoding must be implemented in real time. The development of artificial tactile sensing is a big challenge as it involves numerous research areas. Application domains include humanoid and industrial robotics, prosthetics, biomedical instrumentation, health care, cyber physical systems, virtual reality, arts, to name but a few. Recent and relevant achievements in materials and transducers have not yet successfully boosted system developments due to the challenging gaps which still need to be filled at many levels, e.g. data decoding and processing, miniaturization, mechanical compliance, robustness, among others. Tactile sensing has developed rapidly over the past three decades, but has yet to achieve high impact breakthroughs in application domains. In this Special Issue, we focus on both insights and advancements in tactile sensing with the goal of bridging different research areas, e.g., material science, electronics, robotics, neuroscience, mechanics, sensors, MEMS/NEMS, addictive and 3D manufacturing, bio and neuro-engineering.