A conceptual framework for designing micro electrical connectors for hearing aid instruments - DTU Orbit (07/12/2018)

Electrical connectors play vital roles in modern electronic instruments. Hearing aid devices as advanced combinations of micro mechanics and electronics comprise various electrical connectors for different purposes. However, the current trend in the miniaturization along with the sharp technological advancements have urged them to incorporate increased number of electrical contacts. The current paper presents a conceptual framework for designing and manufacturing novel plug and socket systems for hearing aid instruments by using the state of art manufacturing technologies for micro components. These concepts have the capability of using as different connectors like RIC (Receiver In the Canal), programming and FM connection either individually or together. Various conceptual designs are provided for flexible connectors and their advantages and disadvantages are discussed in detail through different computer simulations and experiments on the 3-D printed prototypes. In fact, the presented designs not only are able to provide a range of functions for other similar micro products, but also depict an outline for the challenges in this area and the possible approach and solutions in the design of micro electrical connectors.

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