The Design of Smart Tactile Textiles for Therapeutic Applications

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Abstract : Smart tactile textiles are a series of textile-based products that incorporates smart embedded technology to be utilized as tactile therapeutic applications for 2 main groups of target users. The first group of users will be children with sensory processing disorder who are suffering from tactile sensory dysfunction. Children with tactile sensory issues may have difficulty tolerating the sensations generated from the touch of certain textures on the fabrics. A series of smart tactile textiles, collectively known as 'Tactile Toys' are developed as tactile therapy play objects, exposing children to different types of touch sensations within textiles, enabling them to enjoy tactile experiences together with interactive play which will help them to overcome fear of certain touch sensations. The second group of users will be the elderly or geriatric patients who are suffering from deteriorating sense of touch. One of the common consequences of aging is suffering from deteriorating sense of touch and a decline in motoric function. With the focus in stimulating the sense of touch for this particular group of end users, another series of smart tactile textiles, collectively known as 'Tactile Aids' are developed also as tactile therapy. This range of products can help to maintain touch sensitivity and at the same time allowing the elderly to enjoy interactive play to practice their hand-eye coordination and enhancing their motor skills. These smart tactile textile products are being designed and tested out by the end users and have proofed their efficacy as tactile therapy enabling the users to lead a better quality of life.