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Dr.S.Vijikumar

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ijonstnsro@gmail.com,editorijons@gmail.com-www.tnsroindia.org.in

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Editorial

Dear Readers…

Inspiration from Nature

Design for the environment, sometimes called ecodesign or green design, is a systematic way of considering the entire life or life cycle of a product up front, during design. When social along with environmental and economic impacts are considered, this approach is called design for sustainability. Considering the entire lifecycle of a product during design mimics the cycle of use and reuse of all materials found in the natural world. In addition to this core design principle, other natural attributes can optimize and bring distinction to the design of products. From a laboratory in the U.K. comes a biomedical product, inspired by the tolerance of lichen plants for "wetting and drying" cycles. Using what they learned from the plants, researchers at Cambridge Biostability developed a dehydrated vaccine for immunizing children in countries where refrigeration is not readily available. In addition to a long shelf life, no preservative additives such as mercury compounds are needed in these vaccines. As rain water hits the rough surface of a lotus flower, it runs off in small beads, taking any dirt with it. Discovery of this ingenious, natural self-cleaning mechanism, known as the "lotus effect," has led to its use in house paint, tiles, and window glass panes. A Japanese manufacturer, D-Tex, has made use of this natural design feature to colorize a fabric called Morphotex.The fabric's color comes from 61 layers designed to mimic the natural structural color of the wings of a South American butterfly. This technique has the potential to create intense coloration without chemicals or the addition of heavy metals such as cadmium or chromium. Jeff Brinker at Sandia National Labs mimicked the self-assembly process of the abalone shell to create rapid self-assembly of nanocrystal arrays in water at low temperatures. His discovery solved a number of problems that had continued to puzzle materials scientists. The resulting arrays (each nanocrystal is separated by silicon dioxide), which can carry electrical current, are key to development of nano-electronic devices for treatment of disease. The entire production process is compatible with the life-sustaining principles of nature

Naturally yours

Vijikumar. S

Chief Editor