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EDITORIAL

Editor's Desk

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That materials define different phases of human civilization is a clichéd statement. It is matter that matters in most human endeavours. Choice of material is crucial for the performance of anything we build. We often struggle to find a suitable material for a need on hand. We need good materials not only for aircraft and automobile parts but also for a myriad of quotidian needs. Unobtainium, which is an ideal material for a given purpose, was a private joke among engineers and material scientists until the makers of *Avatar*, a Hollywood movie, took it seriously and made it an element to reckon with and to fight for. Nobody can rule out the possibility that some material with extraordinary properties exists in a distant celestial body. However, to explore the outer space, we need materials that can withstand harsh environments of intense radiation and extreme temperatures. We need other kinds of materials to explore vast spaces beneath the earth and inside the oceans.

What about the inner space—the space inside our bodies? In some ways, it is as harsh, if not more, than the outer space. The human body does not accept just about any material: it has to be bio-inert or biocompatible. The innate immune system of the body should not reject it. In this issue, Profs. Bikramjit Basu and Debrupa Lahiri reveal the vast material canvas of that inner space from implants and to artificial organs. The authors of 14 review articles describe the prospects of bio-printing organs and coaxing tissues to regenerate and also narrate the success stories of proven biomaterials.

Mark Miodownik, a materials scientist and the author of the book *Stuff Matters* associates evocative adjectives for different materials to drive home a point. Indomitable for steel, fundamental for concrete, imaginative for plastic, refined for porcelain, delicious for chocolate (yes, he argues that it is an engineered material because cocoa transforms into a delectable solid drink), and so on. What adjective does he use to describe biomaterials? Immortal. Indeed, biomaterials help us live longer and lead healthy lives. The age of biomaterials seems to be round the corner. This issue gives us an inkling of what the future has in store for us.

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