

BEING FAIR AND THE ROLE OF MATERIALS

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ABSTRACT

Materials Science and Engineering is of great importance; materials are what we use to support our daily lives and achievements. This is evidenced by human eras being named after materials (e.g iron/bronze ages), occurring as these materials have defined the capability of humans to address the challenges faced. Incredible performance has been achieved with materials including advanced composites, semiconductors, materials for medical prosthetics and superconductors which have transformed daily lives and human capability. However, currently we are on target to leave our planet much worse than it was when we as individuals came to it. Some have described the current era as the Anthropocene, relating to the impact humans have had on the planet and highlighting that all is not well for humankind and other species living on Earth. How we are using materials and how they are “flowing” through society is a huge problem; the current “take-make-use-waste” models of materials flows has to change to prevent irreversible damage. Effectively, we are stealing from future generations. This has been acknowledged in quotes including the following: “We don’t inherit the Earth from our ancestors, we borrow it from our children”¹. We are currently leaving things very late to act sufficiently to rein in the damage being inflicted on the environment. Advances, including those in materials are now needed to enable the required transition to a more “circular” flow. This talk will focus on transdisciplinary research incorporating the concept of a “circular economy/society” and materials targeted to support well-being and a transition to a fairer world.

KEYWORDS

Circular economy; Materials; natural fibres/natural fibers

[1] Attributed to many authors including Oscar Wilde and Wendell Barry