

CHRISTMAS LECTURE

NEOFOSSILS:

BIO-BASED PLASTICS TO SEQUESTER CO₂?

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Abstract

The news is full of the evils of plastic. But plastic can't be evil, it's inanimate. To begin with everyone loved plastic but the current opinion is that it is an addiction that we need to quit. The problem is that it has become embedded in our lives, and even the most plastic-free hipster or eco-warrior has to acknowledge that it prevents food waste and makes our smartphones work, and Covid19 has clearly shown that it saves lives in hospital and we wouldn't be without our PPE.

It's plastic abuse that is morally wrong. We have produced more than 8 billion tons of the stuff vilified as "plastic".

The ingenuity of polymer scientists & engineers, plus the ubiquity and variety of polymers, mean they are completely embedded in our lives. But the very properties of plastics that make them so useful, they are durable & cheap, also means that they almost worthless post-use, expensive to recycle & easy to discard.

We need to focus on delivering a circular economy for plastics, whether they are derived from fossil carbon or more recent biomass. A systems-based, multidisciplinary approach can solve the problem of plastics in the environment through a combination of reuse, repurposing & recycling.

