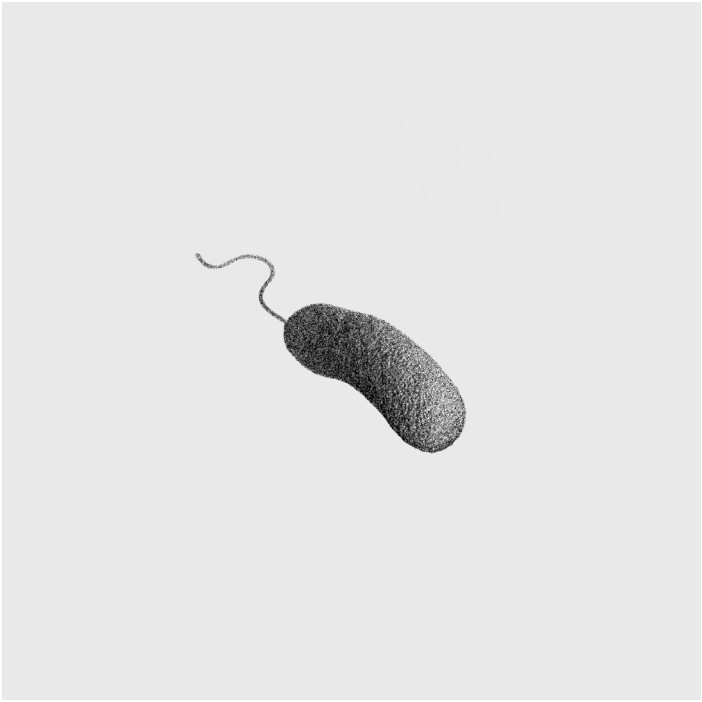


MADONNA





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MADONNA

Since the 19th century, industrial production has been operating mainly in one direction – from resources to products. These unsustainable processes generate tremendous amounts of waste that massively affect the environment, thereby transforming the planet's climate.

Madonna explores new-to-nature reactions to reverse this unsustainable system by integrating living matter into the process. These reactions can be carried out by living organisms, provided that new-to-nature reactions can be included into their genome. Madonna investigates the use of genetic engineering, directed evolution, chemo-robots, and complex computer models to help microorganisms incorporate these new abilities. This will allow them to turn industrial waste into a resource, reversing the process and closing the cycle of production.