TOPIC :- **MANUFACTURING OF BIO-DEGRADABLE PU AND ITS WASTE MANAGEMENT**

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Polyurethane (PU) is a polymer derived from condensation of **polyisocyanate** and **polyol** and it is used in different manufacturing industries such as **shoe-making**. But, with the increasing use of thermo-set polyurethane products, arises the problem of their **eco-friendly disposal**. So, we worked on finding some **economically viable** methods for degradation and **recycling** of the existing polyurethane products and also to **manufacture bio-degradable PU foams**. Our approach is to use **cellulose and starch** in place of polyols because of its similar structure and higher biodegradability. It has also been found that PU soles which are made using Polyester rather than Polyether compounds, are more vulnerable to **microbial attacks**. So, we formulated some sample polymers using different composition of starch and cellulose for preparing Polyurethane and performed compression tests on them in order to check their compressive strength. Other tests which were performed include FTIR and melting point analysis. Later, degradation of the same were performed using bacteria named **Rhodococcus equi** which showed a significant amount of degradation of the samples.