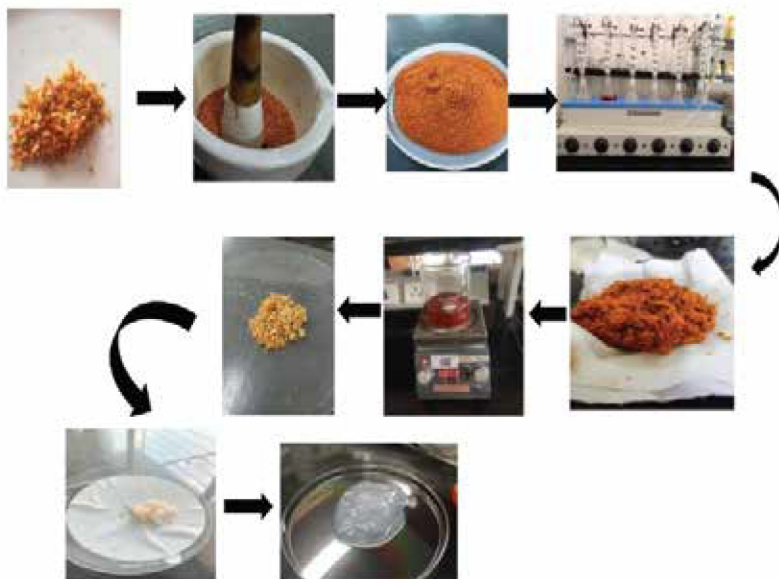


Due to rapid population explosion and various human activities, the scarcity of fresh water has become the main concern for the world. Due to increasing industrialization and urbanization, harmful and hazardous material enters the water bodies, endangering human health. Hence, it is absolutely necessary to remove the various organic, inorganic and biological pollutants that are present in water bodies. A number of researches are going on to find out a radical and inexpensive method to treat water. Available waste water treatment techniques such as membrane filtration, adsorption, flocculation, coagulation, catalytic degradation are inefficient in remediating the toxic pollutants from water. The conventional materials used in waste water treatment are activated carbon and petroleum-based polymer which releases a large amount of carbon, in the production process. It is totally against the creation of a sustainable environment. Therefore, it is necessary to employ a low cost, environment friendly alternative which will have excellent efficiency, along with a low carbon footprint.

In our present study, nanocrystal has been synthesized from tomato peel, by following dewaxing, alkaline process, bleaching process and hydrolysis processes. Characterization of prepared nano crystal cellulose was carried out using FTIR, BET, TEM, SEM, and XRD Analysis. We explored the adsorption capacity and selectivity of prepared cellulose nano crystal for the removal of heavy metal from waste water.



# 08 PROJECT

## SYNTHESIS OF NANOCRYSTAL CELLULOSE

**Vanishree**  
CH

**Vinay**  
CH

**Vanusha**  
CH