

A Session on Prototype/Process Design and Development

16th February 2023

The session on "Prototype/Process Design and Development" is organized under the banner of the Student Start-Up and Innovation Policy and the Institution's Innovation Council, and aims to provide participants with a comprehensive understanding of the design and development process for a prototype. The session will cover key steps involved in transforming an idea into a tangible product and will focus on developing skills to create an effective prototype.

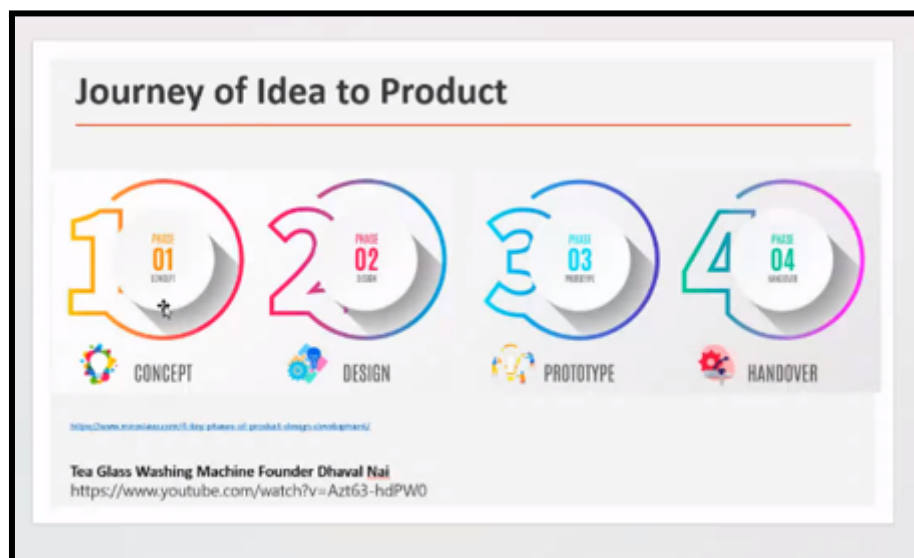
Key Features:

- **Organizing Department:** Chemical Engineering Department
- **Expert Name:** Dr. Jignesh R. Mehta, Assistant Professor, M.S. University, Baroda
- **Date:** 16th February 2023 (2:30 p.m. to 4:00 p.m.)
- **Venue:** online
- **No. of Participants:** 63
- **Event Coordinator:** Dr. Milap G. Nayak

Discussion Points:

- Identify the importance of observation to generate and refine ideas
- Define the research gap before moving on to process/prototype development
- Create 2D/3D drawings to visualize the design of the prototype
- Design the process and mechanical aspects of the prototype
- Fabricate the prototype with practical constraints in mind
- Consider the importance of process parameters and choice of materials in the design
- Validate the prototype through experimental observation to ensure it meets the desired objectives

Glimpses:



Journey of Idea to Product

1

Conceptualizing the idea and generating various sketches to communicate the functionality and aesthetics



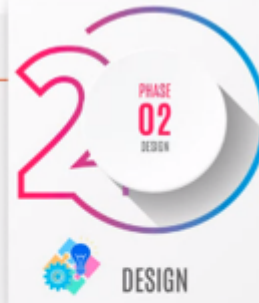
<https://www.mindtools.com/4-key-phases-of-product-design-development/>

Journey of Idea to Product

2


Developing program for finalizing the process parameters e.g. flow rate, temperature change, concentration difference... and/or

2D/3D drawing for finalizing the dimensions, material to be used, coating etc. (heat transfer rates, pressure drop, compatibility of material etc. to be taken into consideration



Journey of Idea to Product

3

Prototype: a first *full-scale and usually functional form* of a new type or design of a construction (such as an airplane) 

Converting the design in physical form; i.e. fabrication of the prototype

