Final Year Project Showcase Batch-2017
Year 2021

Department: Materials Engineering Programme: Materials Engineering		
1	**Project Idea**	**To Design and Develop Cocoon Planter using Indigenous Recyclable Material.**
2	**Process**	Coccon planter was manufactured using polyester as a base and 3 fibres materials such as glass fibre, coconut fibre & jute fibres using a hand layup technique. The design of cocoon planter was developed using solid edge and then a terracotta mold was prepared according to the dimensions. For self-watering purpose, wicks were used. Bamboo wick, jute gunny wick and jute wick shows the best results.
3	**Outcome**	04 cocoon planters were developed. First made from glass fibre reinforced polyester, second made from cement, third made from terracotta and four the made from hybrid composite. The cocoon planter along with plants were planted and were under observation for 1 month. All the plants survived using self-watering provided by cocoon planter for a month.
4	**Evidence (Theoretical Basis)**	The plants survived without external irrigation and with the self-watering system by cocoon planter technology.
5	**Competitive Advantage or Unique Selling Proposition** (Cost Reduction, Process improvement, Attainment of any SDG (Sustainable Development Goal), increase of market share or capturing new market or having superior performance over a competitor. In summary, any striking aspect of the project that compels the industry to invest in FYP or purchase it. Some detailed description is required in terms of how, why when what. You can select one or more from the following dropdown and delete the rest of them). Please keep relevant options, delete the rest of them, and correct the sequence	
b	**Process Improvement which Leads to Superior Product or Cost Reduction, Efficiency Improvement of the Whole Process** (e.g. What is the issue is current process and what improvement you suggests)	The improvement in making cocoon planter was observed. Initially we are making cocoon planter out of terracotta and glass fibre reinforced polyester composite. Then we reduce the cost and replace the glass fibres by indigenous wastes such as coconut fibres and developed a composite out of natural fibres.
c	**Attainment of any SDG** (e.g. How it is achieved and why it is necessary for the region)	**SDG#2, Zero Hunger** Coccon planter helps in growing plants as well as those fruits and vegetables plants and this technology is so affordable. It wants to make sure that people living in poverty are never deprived of food. So, its aim is to promote sustainable agriculture, support small scale farmers and provide access to agriculture technologies. **SDG#15, Life on Land** Cocoon Planter meet this goal as well. By its use, greenery is possible in even deserted areas. We planted only 4 cocoon planters on a barren land. And after a month it is not barren anymore, in fact it has been completely transformed into a greener fertile land. The same results can be seen on larger scale by planting more cocoon planters on dried barren land. Therefore, our project promotes greenery and forestry and will protect the land from desertification. **SDG#13, Climate action** Our project, Cocoon planters will allow growth of trees in even arid areas. And Trees helps to stop Climate change by reducing carbon dioxide from air. It is an ideal and affordable mean to reduce carbon

		in environment and release oxygen in environment. So, SDGs goal of Climate Change will be surely met through our project.
e	**Capture New Market** (e.g. Niche market or unaddressed segment)	This cocoon planter technology will capture market that promotes sustainability and healthy market. Since Pakistan has about 2.2% area covered with forest according to UN. So this technology will help us in promoting and planting more trees.
f	**Any Environmental Aspect** (e.g. carbon reduction, energy-efficient, etc.)	Planting trees and making Pakistan healthier is the main of this project. Cocoon planter promotes self watering technology that enable the plants to survive in its critical first year and in this way the land becomes greener and prosper. The carbon reduction will be enhanced by planting trees and the process is made from indigenous recyclable fibres such as coconut fibres so it is energy efficient as well.
g	**Any Other Aspect**	Recycling indigenous materials such as coconut fibres which only end up as trash is the other main aspect of this project.
7	**Team Members** (Names & Roll No.)	ENJILA IRFAN MM-17003 AREEBA ALAM MM-17010 HAFSA SHAFI MM-17014 AFIFA BAQAI MM-17015
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10	**Pictures (If any)**	     
11	**Video (If any)**	Video MMD 2021