



Final Year Project Showcase Batch-2017 Year 2021

Department: Polymer & Petrochemical Engineering Programme: Polymer & Petrochemical Engineering		
1	Project Idea	To Explore the Effect of Ground Tire Rubber (GTR) on Mechanical Properties of Low Density Polyethylene (LDPE).
2	Process	In this project the mixing is done with mechanical mixer and sample is made on Compression Molding Machine (Hot Press). For testing purpose Universal Testing Machine and impact tester is used.
3	Outcome	The basic outcome of the project is to check the effect of GTR on the mechanical properties of LDPE so that it can used as an elastomer and replace traditional rubber material for different application special gym floor matts. .
4	Evidence (Theoretical Basis)	Project Report (https://drive.google.com/file/d/1YPvARkGOi-95V0r93fzZ5PIYGAZ4sA7S/view?usp=sharing)
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	
a	Cost Reduction of Existing Product	The project is basically focused on investing the effect of ground tire rubber on the properties of LDPE. Cost analysis was not the part of the project.
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 possible application of the ground tire reinforced polymer is in gym floor matts. The gym floor matts are made from rubber and with passage of time the matts loses its efficiency. By using this elastomer the product efficiency can be increased.
c	Attainment of any SDG (e.g. How it is achieved and why it is necessary for the region)	SDG#12 Responsible Consumption and Production, SDG#13 Climate Action Ground tire rubber can not be recycled by primary recycling route that's why it cause environmental problem. By incorporating rubber into thermoplastic material can increae its impact properties and its also good to consume scrap rubber into useful application and make it environmental friendly.
d	Expanding of Market share (e.g. how it expand and what is the problem with the current market)	Further work can be done by making gym floor matts and perform all the testing on actual project. If the successful results can be attained then the material can replace the tradional rubber material.
e	Capture New Market (e.g. Niche market or unaddressed segment)	Unaddressed segment



f	Any Environmental Aspect (e.g. carbon reduction, energy-efficient, etc.)	The project is basically based on reusing of ground tire rubber to increase the impact properties of Polyethylene. Ground tire is not recycleable and create environmental issues. Bu incorporating this in thermoplastic material, the environmental impact can be reduced.
g	Any Other Aspect	N/A
6	Target Market (Industries, Groups, Individuals, Families, Students, etc) Please provide some detail about the end-user of the product, process, or service	The suggested application of the material is related to commodity use.
7	Team Members (Names & Roll No.)	Aliza Khan (PP-17013) Syed Danial Uddin Razi (PP-17026) Fahad Ahmed (PP-17033) Syed Muhammad Saad Hussain (PP-17040)
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10	Pictures (If any)	N/A
11	Video (If any)	N/A