EVONIK SUSTAINABLITY CHALLENGE 2025

Do you have ideas for efficiently recycling plastic waste into high-purity monomer?

- **Production Capacity:** Design a plant capable of producing 30,000 tons per annum (30 kta) of BHET, Bis(2-hydroxyethyl) terephthalat
- **Composition of PET:** Consider a waste stream that is majority PET (approx. 80-85%).
- **Process:** Glycolysis of PET with Sodium Alkoxide as Catalyst.
- **Purity:** Ensure the produced BHET is of high purity.
- **Pre-treatment:** Consider pre-treatment methods to effectively remove water content and facilitate the depolymerization of PET.
- **Simulation:** Utilize simulation tools such as Aspen or Hysys to model your process.
- **Economic Viability:** Conduct an economic viability study to assess the feasibility of the proposed process.

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ELIGIBILITY & PRIZES

1. **Eligibility:** Bachelors (2nd – 4th year) and Masters (1st & 2nd year)
2. **Faculties:** Chemical, Chemistry, Mechanical, & Environmental Sciences
3. **Team Size** of max 3 students
4. **Prizes**
   - 1st place: INR 1.5 lakhs
   - 2nd place: INR 75 Thousand
   - Certificates to noteworthy teams

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DEADLINES

1. **31st Jan 2025:** Virtual Q&A during Exergy
2. **2nd Feb before 11.59pm**: Submission of max 2-pager interim report in ppt format
   - Shall include block diagram, prelim process description and plan of activities until 7th March.
   - Shortlist of teams
3. **7th March before 11.59pm:** Submission of max 10-pager interim report in ppt format
4. **All submission to:** recyclingchallenge2025@evonik.com

FOR FINAL SUBMISSIONS IN MARCH

1. Description of the production plant with indication of the essential calculations and assumptions.
2. Evaluation of the chemical process and separation techniques.
3. Findings from the simulation helpful.
4. Evaluation and description of equipment alternatives.
5. Basic flow or block diagrams.
6. Evaluation of upstream processes, example collection & sorting, considering economic aspects.
7. Economic viability and profitability analysis.
   - For further repolymerization to be economical, the production costs for the BHET may not exceed 70-80% of the PET sales price.
   - Consider location of plant India.
8. Repolymerization process is **not in scope** of the Sustainability Challenge.

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