

## JR IDP Problem Statement - SY

**Do you think that you can be the next avenger to protect Human race from this deadly Corona Virus?** Even if you don't have proper specialization in this area, you can still bring about a change by contributing to other problems faced in this pandemic!!!  
Some of the unheard inventions and discoveries in Science had always been brought into real life application during global crisis such as world-war or Pandemic!!!

**BIO-MEDICAL WASTE (BMW) TREATMENT.**

BMW generated in India in 2020.

Month	BMW (Tonnes)	TPD (Tonnes per Day)
June	3025.41	101
July	4253.46	137
August	5238.45	169
September	5490	183
October	5597	181
November	4864.53	162
December	4527.55	146

Source - <https://cpcb.nic.in/covid-waste-management/>

According to **Central Pollution Control Board (CPCB)**, we have **generated more than 33 kilotonnes of Bio-medical waste in the last 8 months**. As of February 2021, **India ranks 2nd in terms of Covid-19 cases all over the world**. Hence it is quite reasonable to expect similar trends in terms of Bio-medical Waste Generation for the next few months.

**Bio-medical waste consists of used masks, PPE kits, gloves, tissues, syringes, and swabs contaminated with blood and body fluids of Covid-19 patients.** Common Bio-medical Waste Treatment and Disposal Facility (CBWTF) under CPCB collects this waste and treats it using the following methods.

1. Incineration/ Plasma Pyrolysis
2. Autoclaving/ Hydro-clave
3. Microwaving
4. Chemical Treatment
5. Dry Heat Sterilization
6. Shredder
7. Sharp pit/Encapsulation
8. Deep Burial
9. Non-burn Technology



TECHNOLOGICAL  
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THE CHEMFEST  
**VORTEX 8.0**



**Design a plant to treat 150 TPD of biomedical waste** using your engineering knowledge. **Innovative Strategy is most appreciated.** You can always use existing methods or their combination as long as it is properly utilized.

What we expect?

1. The process should lead to minimum pollution.
2. The process should be safe to operate.
3. All the material and Energy balance calculations must be justified properly.
4. The process should be economical and cost analysis is expected.
5. Assumptions should be clearly mentioned.
6. All the references must be clearly specified.

