



Vigyan 2.0

Hackathon-2022

Problem Statement No. 1

Sr. No.	Title	Details
1	Theme	Smart Automation
2	Student	School or College/University
3	Problem Statement	Synthesis of Tungsten Carbide at low temperature.
4	Details of Industry / Organization	Name: Vise Innovative Solution Enterprise Pvt. Ltd. Contact Person Name: Prakash Vaghasiya Designation: CEO Email Id: visedirector@gmail.com Mobile No. 9601365935
5	Category	Hardware
6	Challenge Description	Tungsten carbide (WC) is a chemical compound specially known for its hardness. Tungsten carbide has applications in cutting tools for machining, ammunition, mining and foundation drilling, nuclear, sports usage, surgical instruments, jewelry, etc. Tungsten carbide is prepared by reaction of tungsten metal and carbon at 1400–2000 °C. Other methods include a lower temperature fluid bed process that reacts either tungsten metal or blue WO₃ with CO/CO₂ mixture and H₂ between 900 and 1200 °C. For its high temperature synthesis the production of tungsten carbide is very difficult and it is also very expensive and challenging. So, our try is to make the production of tungsten carbide on maximum low temperature.
7	Expected Outcomes	Synthesis of tungsten carbide at low temperature.