

CSIR-IIIM Jammu -Mentored Solar Mech Engine Wins Top Honor at HonorsGradU 2025 Scholarship Awards

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Jammu, May 4, 2025 – In a landmark achievement for Indian student innovation, Japteg Singh Bamrah, a Class 12 student from Dalhousie Public School, has won the prestigious *HonorsGradU 2025 Scholarship*, securing the coveted “*Build a Better Future*” Award for his groundbreaking invention—the **Solar Mech Engine**.



Japteg Singh Bamrah and his Mentor, Dr. Nasir Ul Rasheed, demonstrating the Solar Mech Engine project executed under the Jigyasa Hackathon initiative.

Mentored by **Dr. Nasir Ul Rasheed**, Senior Scientist at **CSIR-Indian Institute of Integrative Medicine (IIIM), Jammu**, under the *Jigyasa Hackathon* initiative, Japteg emerged as one of five global winners out of thousands of entries from around the world. He has been awarded a **\$10,000 scholarship** for his undergraduate education in the United States, along with an **additional \$5,000 grant** for further development and scaling of his innovation. Notably, his project was recognized as the *top technology* among this year’s winners.

Organized by **Honors Graduation**, a U.S.-based non-profit supporting student-led sustainability and innovation projects, the HonorsGradU Scholarship is highly competitive, offering only five awards annually across the globe. Japteg is the **first and only student from India since the program’s inception in 2012** to top the list, marking a moment of pride for the nation.



During the **National Startup Festival** held on February 22–23, 2025, at CSIR-IIIM, Jammu, Japteg presented his Solar Mech Engine to **Dr. Jitendra Singh**, Union Minister of Science and Technology and Vice President of CSIR, who graced the event as Chief Guest. The festival highlighted India’s growing support for grassroots innovation under the “*Start-Up India, Stand-Up India*” campaign, originally launched by Prime Minister **Shri Narendra Modi** in 2015 and spearheaded by Dr. Singh.

The **Solar Mech Engine**, which earlier won the *CSIR Jigyasa Hackathon 2024*, is a standalone solar thermal system that operates on **Concentrated Heat and Power (CHP)** technology. It utilizes the principles of **cyclic air expansion and contraction** due to temperature differences to convert **heat energy into mechanical energy**. A key feature is its **low-resistance generator**, which employs **electromagnetic induction** for direct mechanical-to-electrical energy conversion. Its **unique selling proposition** lies in its ability to function as a **reversible heat pump**, making it a highly efficient and sustainable energy solution.

CSIR-IIIM’s incubation and mentoring of Japteg’s project underscores its commitment to empowering young innovators and transforming their ideas into practical, scalable technologies.

In recognition of his innovation and academic excellence, Japteg has received offers from over **ten top universities across the USA, Australia, and Canada**, with additional **scholarships amounting to \$16,000 annually** for his undergraduate studies.

With a total grant of **\$31,000**, Japteg Singh Bamrah plans to refine his Solar Mech Engine further and pursue his higher education at a leading global university. His journey from a school innovator to a global sustainability advocate stands as a testament to the power of mentorship, vision, and grassroots innovation in building a better future.

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