PRANAY PRAKASH

B-Tech, Mechanical Engineering,

Undergraduate (5th semester),

Indian Institute of Technology - Patna

● Contact: +91-9798693126 ● E-mail: prakash.pranay1994@gmail.com

Educational Qualification

Year	Level	Institute	CPI/Percentage
2013-17	B.Tech, Mechanical Engineering	IIT Patna	8.03/10
2012	AISSCE (CBSE-12th)	K.V. Danapur Cantt., Patna	93.5%
2010	AISSE (CBSE-10th)	K.V. Danapur Cantt., Patna	10/10

Academic Achievements

- Secured a rank of '**4989**' among 15,00,000 students in JEE-MAINS and **'4998'** among 1,50,000 students in JEE-ADVANCED (Engineering Entrance Examinations for IITs).
- **Zonal winners** (1st Position) of Indo-US Robo-League (IURL-2014) held at BIT, Patna.
- Participant-National Round IURL-2014.
- **All India Rank – 05**, **Regional Rank-01** in the 12th Junior Mathematics Olympiad-2009 (National Level Mathematics Competition).
- Member of Team-BAJA, IIT Patna for BAJA '15 (An All-Terrain Vehicle contest under SAE).
- **Captain** of **Team-BAJA**, IIT Patna for BAJA '16 (An All-Terrain Vehicle contest under SAE).
- Currently working on a project – '**GRAVITY LIGHT**'–Harnessing gravity for energy production.
- "HINDUSTAN PRATIBHA SAMMAN" - 2010 for CBSE 10th Board performance (organized by HINDUSTAN – a National Daily).

Extra-Curricular Achievements

- Attended **JENESYS** (A Student Exchange Program) in **JAPAN** for over a week in May, 2012 organized by the GOVT. OF JAPAN.
- **Secretary** – **SAE** (Society of Automotive Engineers) Club IIT PATNA (2015-16).
- Active as **volunteer** for collegiate clubs such as SAE, SCME (Student Council of Mechanical Engineers), RTDC (Rural Technology Development Club).
- **Organizer** of technical events at 'ANWESHA-15' - Annual Techno-Cultural Fest of IIT PATNA.

Skills

APPLICATION SOFTWARE:

- SOLIDWORKS, Auto-CAD, PRO-E
- MATLAB
- ANSYS - FLUENT, STATIC STRUCTURAL
- ADAMS (Car)

OPERATING SOFTWARE: MS Windows, WORD, EXCEL

PROGRAMMING LANGUAGES: C, C++,JAVA

MACHINERY OPERATION:

- 3-D Printing
- Lathe/Milling - Conventional and CNC
- Welding/Casting
- Laser Cutting/Wire EDM
- DAQ Systems
- UTM/Torsion/Hardness/Impact–Testing

Areas of Interests

- Renewable energy
- Automobiles
- Robotics
- General Machinery

Projects

- **SUMMER PROJECT – Flow Simulation in 3D around Darrieus VAWT :**
  (Faculty Advisor : Dr. Ujjwal K Saha, Prof. IIT GUWAHATI)
  Worked on the procedure for simulation of air flow around wind turbines focused on 'lift' based turbines-Darrieus VAWT (Vertical Axis Wind Turbine). Most of the research papers work on 2D analysis which deviates from experimental data. This project aimed to develop and analyze a 3D case for better simulation results on VAWT. It reviewed the main basic research methods and provides a step wise simulation strategy for the study of Darrieus Wind turbines in 3D. ANSYS-FLUENT was used for simulation.

- **BAJA '15 & '16 :**
  (Faculty Advisor : Dr.Akhilendra Singh, Assist. Prof.,IIT PATNA
  Dr.Somnath Roy, Assist. Prof.,IIT PATNA)
  BAJA is an ATV (All Terrain Vehicle) designing and fabrication competition organized by the SAE (Society of Automotive Engineers) every year where students participate as teams. I was member of the college team last year. Work in the manufacturing/fabrication department. Captain of the current team. We have successfully cleared the VIRTUAL round and have got our design approved. I worked in the 'Steering' department- designing the steering mechanism of our vehicle for overall stability and durability. Skills on ANSYS, ADAMS (Car) & CAD were put to use.

- **LOW WIND SPEED TURBINE DESIGN :**
  (Faculty Advisor: Dr. Manabendra Pathak, Assist. Prof. IIT PATNA)
  Designed of a Wind Turbine to operate in low wind speed regions. A vertical axis hybrid model was prepared that used both 'drag' and 'lift' principles for energy conversion. Flaps were provided with airfoil shape that opened and closed as per direction of wind motion to provide continuous torque. Airfoil shape reduced the lagging drag. Major driving force was provided by drag. Lift helped overcome the restricting drag force. It was a kind of hybrid of Darrieus and Savonius turbines.

- **SPEED-BRAKER ELECTRICITY :**
  (Faculty Advisor: Dr. Probir Saha , Assist. Prof. IIT PATNA)
  Designed and fabricated a mechanism for utilizing speed-brakers to light up street-lights. A double sided rack-pinion coupled with counter-sprockets to utilize both up and down movement of speed breaker, as the vehicles passed over it. It was 100% more efficient than the normal single rack based mechanism. Manufacturing skills were acquired.

- **HYDRAULIC ARM / ROBOTIC PROJECTS :**
  Participated and won in events like 'Hydraulic Arm', 'ROBO-Wars', 'Aqua-Soccer'.

Relevant Courses Undertaken

- SOLID MECHANICS
- HEAT & MASS TRANSFER
- KINEMATICS OF MACHINERY
- STRENGTH OF MATERIALS
- ENGINEERNG DESIGN
- OOP AND DATA STRUCTURES
- FLUID MECHANICS
- MANUFACTURING PROCESSES
- THERMODYNAMICS
- MACHINE DRAWING
- ELECTRICAL SCIENCES
- BASIC ELECTRONICS LABORATORY

Declaration

I hereby declare the information given above is true to the best of my knowledge, as of August, 2015.

PRANAY PRAKASH