

Loihi Vanguard

2010 MATE International ROV Competition
Hilo, Hawaii



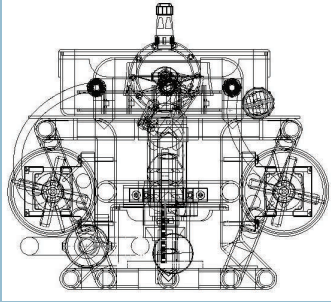
Team Profile

School name: City University of Hong Kong

Team name: Shadow of the Dragon

Home state: Hong Kong SAR

Distance travelled to the international competition: 9263 km (5756 miles)



Front view of the ROV

Name	Role	Status	Grade
GAO Jiabei (Gabriel)	Team Captain	returning	BEECE Year 2
GUO Hao (Jason)	Electronics	returning	BEECE Year 2
MA Yuting (Wolfina)	PCB fabrication	new	BEECE Year 1
TONG Huachen(Bobby)	3D Interface	new	BEECE Year 1
ZHANG Cheng (Gus)	Electronics & Software	new	BEECE Year 1
CHU Hung Wing (Peter)	3D Solid Works	returning	MEEM Year 2
YAHYA Yasir Ali	Payload installation	new	BEECE Year 2

Special Features

- Powerful Propulsion
- Rigid Frame
- Versatile Robot Arm
- 2 Cameras
- Flexible Joystick Control
- 3-D Interface
- Digital Compass
- Frequency Detector
- Thermometer

ROV Specifications

ROV name: Loihi Vanguard

Total cost: 1,700 USD

Construction Material: PVC

Dimensions: 70*45*40 cm

Depth Rating: 5 m

Total System Weight: 10 kg

Speed: 2 knots

Power Supply: 48V, 40 A

MCU: PIC16F876A

Main Camera:

Location: Front End

Features: Wide Angle & High Resolution

Second Camera:

Location: Rear End

Features: Inbuilt Lighting System

Propulsion:

Propellers: 100 mm diameter

No. of thrusters: Three

Power Rating: maximum 580 Watts

Control Console:

Communications protocol: RS 232

Case: Waterproof Acrylic

Control panel: Laptop PC Joystick

Onboard Tools and Sensors:

Water pump driven collectors

4-joint high torque manipulator

Hydrophone

Temperature sensor

Digital Compass

Safety Features:

2-layered water proof box

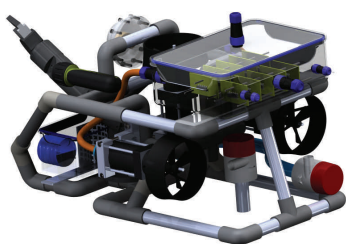
Fuses

Circuit Breaker

Watchdog LED



Team photo taken on 26 May, 2010



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