भारतीय प्रौद्योगिकी संस्थान गुवाहाटी
INDIAN INSTITUTE OF TECHNOLOGY GUWAHATI

Assistant Registrar
Students' Affairs

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To,

MRINAL KANTI MAHATO.
Club Secretary, 4i Lab,
Technical Board, SGC 2019-20,
IIT Guwahati, Guwahati-781039

Ref.: IITG/SA/TB/214//2019-20/001
Date: 18-07-2019

Permission Cum Sanction Sheet

Sub : Permission for 4i_Lab_Budget_Biosat-Antasagri

Ref : Application dated 2019-06-10 seeking permission for the subject mentioned above.

Dear Mr.MRINAL KANTI MAHATO,

With reference to your application stated above, you are hereby informed that, the Competent Authority of the Institute has **approved** your request as detailed below-

Sanction Order No :	253/2019-20/SA/001		
Budget Code/Head :	77.3.2/4i Lab		
Sanction Amount :	Rs. 364841		
Name of the Grantee :	MRINAL KANTI MAHATO, Club Secretary, 4i Lab.		
Sanction Order valid till :	March 01, 2020.		
Permission granted for :	4i_Lab_Budget_Biosat-Antasagri.		
Venue/Date/Time :	New SAC Building	20-06-2019 TO 08-09-2019	12:00 AM TO 12:00 AM
Deteils of the Event :	Bio-stellite: With the addition of a remarkable project idea, bio-satellite an ongoing nano-satellite design initiative is included in 4i labs, IIT Guwahati. The overall objective of the mission is to support Human Space Programme (HSP) of ISRO. Team is planning on developing a payload for the project which supports such experiments by september end this year. Antasagri: This project will have a completely different dynamics this year with new team members, with an aim of under water navigation and mapping, with a final goal underwater salt analysis, with depth stabilization, Also improving land-water communication by introducing IOT..		

Contact Person :	MRINAL KANTI MAHATO, Club Secretary,4i Lab, Technical Board,SGC 2019-20, IIT Guwahati.
Remarks of the Sanction Authority:	Approved.
Separate Permission Required for :	New SAC Building,.
Terms & Conditions :	Institute norms to be followed.

It may Kindly be noted that, once approved,after completion of the event or fulfilment of the purpose(s), the person(s) rsponsible will have to submit a detailed report to the undersigned with a Utilization Certificate of the fund. You are also advised to follow all the S & P and F & A rules when purchasing equipment/consumables, taking advance, making stock entry, setting the bills etc., whatever applicable.

Assistant Registrar

(Students' Affairs)

Copy to :

1. Dean of Students' Affairs.
2. Chairman, Technical Board.
3. Vice President, SGC 2019-20.
4. Genaral Secretary, Technical Board, SGC 2019-20.
5. SA Office.

BIOSATELLITE PROJECT

The budget requirement is divided into two parts:

1. For Microfluidics section
2. For Holography section

List of equipment's required for the Microfluidics part:

S.No	Equipment	Quantity	Price tag (₹)	Total price(₹) with shipping charges	Comments
1.	Bubble Trap pack	1	14,000	17,500	Required to capture the bubbles formed during the fluid flow
2.	Peristaltic pumps	2	25,000	30,000	
3.	Tubings	1	4000	8500	
4.	Digital Microscope	1	37,000	45,000	For viewing microfluidic chip
5.	Reservoir(100ml) 4 port	2	16,000	20,000	
6.	Microfluidic Chip Design by Achira labs	1	10,000	10000	
7.	3 Port Solenoid valve	7	7000	10000	

List of equipment's for Holography part:

S.No	Equipment	Quantity	Price tag	Total price	Comments
1.	Logitech HD pro Webcam c920t	1	8500	8500	
2.	Precision Pinhole(Thorlabs) 5micron	1	7000	8000	
3.	Microscope objective (10X)	1	6000	6000	
4.	RGB LED	5	200	1000	

Total Price: INR 1,64,500

Advance required: INR 1,41,000

4i Lab, IIT Guwahati

Antasagari (Underwater ROV)

Budget plan

Sl.No.	Equipment	Qty	Price Tag (in Rs)	Comments
1	SOS Leak Sensor	1	2639	the SOS Leak Sensor can detect water leaking.
2	SOS Probe Tips, SOS Probes	1	637	These extra probe tips for SOS Leak Sensor probes.
3	PCB for CelsiusFast-Response	1	3094	The Celsius temperature sensor is a fast-response, high-accuracy temperature sensor.
4	I2C Level Converter	2	2548	he I2C Level Converter allows you the run 3.3v logic sensors.
5	Ping Sonar Altimeter and Echosounde	1	25389	The Ping sonar is a single-beam echosounder
6	BLUART USB to Serial and RS485 Adapter, 6" Straight Micro-USB to USB-A Cable	1	3640	This compact adapter connects to USB and provides a TTL serial port or RS485 serial port connection.
7	ProTek RC 370TBL "Black Label" Waterproof High Torque Brushless Crawler Servo	1	16289	This is for rotation of sonar.
8	Low-Light HD USB Camera	1	8190	Low-Light HD USB Camera is ideally suited to use underwater.
9	Camera Tilt System, Mount for USB Camera	1	3185	This camera tilt system provides up/down pitch tilting for a camera
10	Bar100 High-Resolution 1000m Depth/Pressure Sensor	1	22750	The Bar100 pressure sensor is a high-pressure underwater pressure sensor.
11	O-Ring Set for M10 Cable Penetrators, Silicone Grease – 10g Tube	1	637	

12	Lumen Subsea Light for ROV/AUV	1	819	The Lumen Subsea Light is a blindingly bright LED light for use on ROVs, AUVs, and other subsea applications.
13	Jetson nano	1	8,899	For on board processing
14	T200 Thruster	4	61880(15470 each)	For increase degree of freedom
15	Basic ESC	4	9100(2275 each)	For motors
16	Watertight enclosure	1	20020	For waterproofing
17	Netgear Nighthawk R7000P AC2300 Smart MU-MIMO Dual-Band Gigabit Wi-Fi Router	1	10,625	For wireless communication
			200341	Total

Total Budget Amount: Rs. 2,00,341

Antasagri (Underwater ROV)= Rs. 2,00,341

Bio-Satellite =Rs.164500

Gross Total= Rs. 364841