



**Er. Hari Ram Shrestha, Head of Space Research Centre, NAST**  
**(Solar, Space & Astronomy)\_SoSA**

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Hari Ram Shrestha is a dedicated Nepalese space systems engineer and researcher with extensive experience in satellite development and space technology. He is a Ph.D. candidate in electrical and space engineering at Kyushu Institute of Technology (Kyutech) and has contributed significantly to Nepal's space exploration efforts. He has worked on several satellite missions, primarily designing and developing the mission design development, energy systems and operation. Shrestha is currently the head of the space research center at the Nepal Academy of Science and Technology (NAST), where he works space science and technology initiatives. He has also worked on renewable energy projects and set up GPS/GNSS stations in Nepal to aid geoscience and earthquake research.

### **Educational Background**

- holds a master's degree in applied science for Integrated Systems Engineering from the prestigious Kyushu Institute of Technology (Kyutech) in Japan
- Currently pursuing a Ph.D. in Space Systems Engineering at Kyutech via the Japanese Government (MEXT) Scholarship and the United Nations/Japan Long-term Fellowship Program (PNST).

### **Vision & Goals:**

- Establishing NAST's Space Research Centre as a National Space Research Hub
- Advancing Nepal's Space Technology through research, outreach program, capacity build up, innovation, and international collaboration

### **Awards**

- NAST Employ Recognition Award, 2016 A.D.
- Better Satellite World Awards - SSPI UK Nov 2020 Awarded for the BIRDS Satellite Project along with UK Space Agency and Geeks Without Frontiers [BIRDS team award]
- Kirtimaya Rashtradeep Fourth Class 2076" (National) medal from Nepal's Right Honorable President, Mrs. Bidya Devi Bhandari, on April 9, 2021.
- IAF Emerging Space Leaders 2021, Dubai
- Emerging Space Leaders Scholarship 2022, 20<sup>th</sup> SGC, Paris 2022
- The Prime Minister National Talent Award 2081
- Co-Developer of Nepal's First Satellite, NepaliSat-1: played a pivotal role in designing and developing the satellite's electrical subsystems, marking Nepal's entry into space exploration.

### **Professional Roles**

- Currently Heads of Space Research Center at Nepal Academy of Science and Technology (NAST). Its is called also **SoSA**.
- Focuses on satellite development, Hybrid Rocket propoulsion, and capacity building for Nepalese space exploration.
- Satellite applications

### **Research and Contributions**

- Focused on improving the reliability of nanosatellite power systems in order to ensure space sustainability.
- Contributed to various CubeSat projects, including BIRDS-3, BIRDS-4, and Kitsune, CURTIS, MO-1 satellites, Ligno, ASEAN etc. working on subsystem design and ground station operations and mentoring.
- Leads projects on GNSS-based vehicle tracking, disaster management, and environmental monitoring.

### **Other experiences**

- Installation and maintenance of 13 GPS/GNSS stations network in different parts of Nepal for the study of earthquakes
- Establishment of the metrological tower at Bode, Bhaktapur as a part of NRDC project under Japan International Cooperation Agency (JICA).
- Maintenance of NAST-EvK<sup>2</sup>-CNR Pyramid Lab (the lab at the highest altitude)

### **Paper Publications/Presentations**

#### **Journal:**

**Title:** One Year On-Orbit Results of Improved Bus, LoRa Demonstration and Novel Backplane Mission of a 1U CubeSat Constellation

**Author(s):** Abhas MASKEY , Pooja LEPCHA , Hari Ram SHRESTHA , Withanage Dulani CHAMIKA , Thrindu Lakmal Dayarathna MALMADAYALAGE , Makiko KISHIMOTO , Yuta KAKIMOTO , Yuji SASAKI , Turtogtokh TUMENJARGAL , George MAEDA , Sangkyun KIM , Hirokazu MASUI , Takashi YAMAUCHI , Mengu CHO

Journal: J-STAGE, 10.2322/tjsass.65.213

**Title:** Himalayan strain reservoir inferred from limited afterslip following the Gorkha earthquake

**Author(s):** David Manchin, Rebecca Bendick, Bishal Nath Upreti, Danda Pani Adhikari, Ananta Prasad Gajurel, Roshan Raj Bhattarai, Hari Ram Shrestha, Tara Nidhi Bhattarai, Niraj Manandhar, John Galetzka, Ellen Knappe, Beth Pratt-Sitaula, Abdelkrim Aoudia & Roger Bilham

Journal: Nature Geoscience 9, 533-537(2016)

#### **Conferences:**

- Hari Ram Shrestha, BIRDS-4 Project Members, George Maeda, Sangkyun Kim<sup>1</sup>, Hirokazu Masui<sup>1</sup>, Takashi Yamauchi<sup>1</sup>, Mengu Cho, "BIRDS-4 1U CubeSat Missions and On-Orbit Results" 11th Nano-Satellite symposium [2022 AD, Online]

- Hari Ram Shrestha, Izrael Zenar Casople Bautista, Adolfo Javier Jara Cespedes, BIRDS-4 team, Takashi Yamauchi, Mengü Cho," RESULTS OF BIRDS-4 SATELLITE ON-ORBIT POWER PERFORMANCE FOR ENHANCING 1U SATELLITE POWER SYSTEM RELIABILITY" IAC-22-C3.3.12, 73rd International Astronautical Congress (IAC), Paris, France, 18-22 September 2022.
- Hari Ram Shrestha, Purio Mark Angelo Cabrera , Izrael Zenar Casople Bautista, Adolfo Javier Jara Cespedes, Kim Sangkyun, Takashi Yamauchi, Mengü Cho," VERIFICATION OF THE 1U STANDARD CUBESAT ELECTRICAL POWER SYSTEM (EPS) FOR THE INTERNATIONAL SPACE STATION (ISS) SAFETY REQUIREMENTS, IAC 2021,Dubai [Online]
- Hari Ram SHRESTHA, Juan J. ROJAS, Takashi YAMAUCHI and Mengü CHO, Kyushu Institute of Technology ‘‘Study of the Capacity Degradation of NiMH Cells at Different Temperatures in Space Environment’’ JSASS-2019-S036
- Hari Ram SHRESTHA, Rodrigo CORDOVA, Necmi CIHAN, Reynel Josue GALINDO, Yasir ABBAS, Takashi YAMAUCHI, Mengü CHO "Acceptance Screening and Cell Matching: Achieving Optimal COTS Li-Ion Battery Performance for Space Applications",CubeSat Developers workshop 2023, April 30, 2023, Cal Poly, San Luis Obispo, California, USA
- Makiko Kishimoto, Tharindu Lakmal Dayarathna Malmadayalage, Abhas Maskey, Pooja Lepcha, Dulani Chamika Withanage, Yuta Kakimoto, Yuji Sasaki, Hari Ram Shrestha, BIRDS Partners, George Maeda, Takashi Yamauchi, Sangkyun Kim, Hirokazu Masui, Mengü Cho Kyushu Institute of Technology ‘‘Improvement of Communication System for 1U CubeSat’’ 34th Annual Small Satellite Conference, July 28, 2020, USA.
- More Papers  
<https://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=5808&context=smallsat>  
<https://digitalcommons.usu.edu/smallsat/2023/all2023/198/>  
<https://digitalcommons.usu.edu/smallsat/2024/all2024/178/>  
<https://digitalcommons.usu.edu/smallsat/2021/all2021/245/>

### **Poster presentations:**

- ✧ Title: Real-Time Measurement of Solar Radiation in Kathmandu Valley  
 Author(s): Kyoko Shuku, Deb K Shah, Hari Ram Shrestha, Liyan Sharma, and Suresh Kumar Dhungel  
 The 7th National Conference on Science and Technology, 2016
- ✧ Title: Examine the Capacity Degradation of NiMH Cells in Different Individual Temperatures in Space Environment  
 Authors: Hari Ram Shrestha, Dr.Takashi Yamauchi, Prof. Mengü Cho, Department of Applied Science for Integrated System Engineering Laboratory of Spacecraft Environment Interaction Engineering, 2019 Mid -term Poster presentation

### **Trainings**

S. No.	Training	Organization	Duration
1	Training on Renewable Energy Technologies in South Korea, 2015	Chonbuk National University, South Korea	15 Days

2	Wind Energy Technology for Policy Makers in Nepal, 2015	Arizona State University, United States	3 Days
3	Solar Energy Technology for Policy Makers in Nepal 2015	Arizona State University, United States	10 Days
4	Seminar on Electrification Mode based on Clean Energy in China, 2017	Hangzhou Regional Centre for Small Hydro Power, China	30 Days
5	CanSat Leader Training program, Japan, 2023	Nihon University and UNISEC Japan	10 days
6	Spacecraft Dynamic and Control, India, 2024	IIT Kanpur, ITEC, Indian Emassy, India	14 days
7	Seminar on International Beidou Satellite & GNSS (Global Navigation Satellite System, China, 2024	Wuhan Research Institute of Posts and Telecommunications, China	14 days

### **Skills**

- ✓ PIC programming, design, falut analysis. Functional test plan, Eagle PCB design
- ✓ Solar power generation, battery management, safety review analysis
- ✓ Project Management
- ✓ Satellite Systems developemtn Engineering
- ✓ Printed Circuit Board (PCB) Design
- ✓ Technical Documentation •
- ✓ Design • Eagle CAD/ MATLAB
- ✓ Product Cahin Design
- ✓ Project Proposal Writing

### **Visted Countries:**

USA  
 Japan  
 South Korea  
 France  
 Germany  
 India  
 China  
 Belgium  
 Netherland

### **Outreach and Education**

- Actively involved in training and mentoring students through CanSat programs and workshops, helping to develop a new generation of engineers and scientists in Nepal.
- Promotes space education and awareness through school outreach programs and international collaborations.

### **Contact Information:**

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