RESUME

Name: Biraj Singh Thapa
Address: 62/ Ram Laxman Marg,
Biratnagar-1, Morang, Nepal.
Phone: +977-9861936212
E-mail: bst@ku.edu.np; birajthapa@gmail.com

Current Position (Kathmandu University)

Associate Professor, Department of Mechanical Engineering
Acting Director, Planning and Development Directorate
Team Leader, Green Hydrogen Lab
Program Lead, Nepal Hydrogen Initiatives

Highest Education

PhD *in Fluids Engineering*
Department of Energy and Process Engineering, Faculty of Engineering,
Norwegian University of Science and Technology, Norway

Selected Professional Experiences in Hydrogen Technology

Supervisor for 6 PhD and 15 Master by Research studies in collaboration between Kathmandu University, Nepal; Norwegian University of Science and Technology, Norway; Western Sydney University, Australia; and, University of Flensburg, Germany.

Expert Member, Committee for recommending '*Institutional setup for implementing the Green Hydrogen Policy of Nepal*, Nepal Government, Ministry of Energy, Water Resources and Irrigation, 2025.

Expert Member, Committee for drafting '*Green Hydrogen Policy of Nepal*, Nepal Government, Ministry of Energy, Water Resources and Irrigation, 2023

Expert Member, Committee for '*Green Hydrogen-based Chemical Fertilizer in Nepal*', Nepal Government, Ministry of Energy, Water Resources and Irrigation, 2022.

Member, *Standing Committee on Studies*, World Energy Council, 2022-2025.

Member, *Coordination Committee of Nepal Government for Green Hydrogen Policy*, 2021.

Co-Lead, *Thematic Working Group on Energy*, Himalayan University Consortium, 2021-.

Project Leader, "*Pilot Scale Green Ammonia Production in Nepal for Contribution to Domestic Economy and Better Utilization of Hydropower Electricity",* funded by Nepal Electricity Authority to Kathmandu University, 2022-2024.

Project Leader, "*Design of Industrial Scale Green Urea Production in Nepal for Contribution to the Domestic Economy and Better Utilization of Hydropower Electricity",* funded by Bagmati Province Government, Nepal to Kathmandu University, 2022-2023.

Project Leader, "*Incubation of Synthetic Natural Gas Production Enterprise for Utilization in Cooking Sector",* funded by KOICA to Kathmandu University, 2022-2023.

Project Leader, "*Incubation of Nepal Hydrogen Initiative Program",* funded by NORAD to Kathmandu University, 2022-2024.

Project Leader, "*Technology Transfer and Local Adaptation for Developing Nepal Oil Corporation as a Hydrogen Fuel Producing and Distributing Company",* funded by Nepal Oil Corporation to Kathmandu University, 2021-2023.

SubConsultant to Stantec for World Bank project on *"Hydropower to Hydrogen Potential in Nepal: A High-Level Preliminary Study"*, 2021.

Institutional Contact Person and Project Lead at KU, *Hydro-Himalaya Project funded by Norwegian Government*, 2021-2026.

Project Leader, "*Cooperation for Capacity Development Program on Education of Future Generation of Water Resources Development Professionals",* funded by World Bank to Kathmandu University, 2017-2018.

Selected Contributions in Energy Transition and Green Growth

National Talent Award in Technological Innovation, by the Prime Minister**,** Government of Nepal, 2025.

National Science Technology and Innovation Award by the Minister of Education Science and Technology, Government of Nepal, 2024

Editor of the International Board in the field of Hydrogen, "New & Renewable Energy Journal", 2025-2026.

Invited Participant for Asia Pacific Hydrogen Summit and Exhibition, Brisbane, Australia, 2024.

Invited Participant for, China's Carbon Market Development Progress and Global Carbon Market Cooperation Seminar, Ministry of Ecology and Environment, Wuhan, China, 2024.

Invited Speaker for COP28, on the side event, Addressing Loss and Damage: Nepal's Climate Change Impact and Compensation, Dubai, UAE, 2023.

Invited Speaker for TEDx, on Green Hydrogen for Climate Action: Global Trends and Nepal's Response, Kathmandu University, 2023.

Invited Participant for Study Tour on Hydrogen, National Renewable Energy Laboratory-NREL, Colorado, Department of Energy, USA, 2023.

Invited Speaker for South Asia Energy Masterclass on Green Hydrogen, USAID/ SAREH/ SAREP, online, 2022.

Invited Speaker for Asia-Pacific Hydrogen Workshop, World Energy Council, online, 2022.

Resource Person for Synthesis Workshop on *Renewable energy transitions: A comparative assessment of the Hindu Kush Himalaya, Andes, and Alps,* HUC/ICIMOD, 2021.

Co-Chair, *IAHR-ASIA Symposium on Hydraulic Machinery and Systems***,** Nepal, 2021.

Runner-Up Paper Award, Advancement in Engineering Education (iCAEED), 2019

Session Chair, *IAHR-ASIA Symposium on Hydraulic Machinery and Systems*, Korea, 2019.

Member of Editorial Board, *Journal of Energy*, SCIREA, 2018.

Nepal Representative for *Asia Pacific Water Leadership Program*, co-organized by ICIMOD and ICEWaRM, Australia, April 2018.

Invited Speaker in a side event *Hydropower – part of the solution for sustainable development at Global SDG 7 Conference*, United Nations ESCAP, Thailand, 2018.

Nepal Representative for *Second Meeting of the Himalayan University Consortium Thematic Working Group on Water*, co-organized by ICIMOD and Yunnan University, China, 2018.

Outstanding Reviewer Award, Renewable *Energy Journal*, Elsevier, 2017.

Nepal Representative for *Invitation Program for Science and Technological Human Resources* conducted by the Japan International Cooperation Center, Japan, 2010.

Best Paper Award, *Asia-Pacific Forum on Renewable Energy*, 2011.

Selected Publications on Hydrogen *(Full Publication list: Here)*

Patent

1. **Biraj Singh Thapa,** "Retrofitting Process of Internal Combustion Vehicle to Electric Vehicle, Patent Division, Department of Industries", Nepal Government, Filed date 16 March 2023.

Book

1. Abhishek Subedi and **Biraj Singh Thapa**, "Compendium of Fundamentals of Hydrogen Technology", Published by Kathmandu University, 2023, ISBN 9789937145916.

Selected Journal and IOP Conference Articles

1. Niroula, S., Kafle, N., Chitrakar, S., **Thapa, B.S.**, "Green hydrogen production from surplus hydroelectric power: A case study in Nepal", *J. Hydrogen Energy* (2024), vol. 92, 527-534.
2. Kafle, N., Phuyal, T.P., Singh, K.D., Niroula, S., Sakhya, N., **Thapa, B.S.**, 2024 "Sizing of an On-site Hydrogen Refueling System for a Fleet of Fuel Cell Buses in Dhulikhel-Kathmandu Route" IOP Conference Series: Materials Science and Engineering , vol. 1314, No. 1, p. 012003.
3. **Thapa, B.S.**, Pandey, B., Ghimire, R., "Economy of Scale for Green Hydrogen-Derived Fuel Production in Nepal", *J. Frontiers in Chemistry* (2024), vol 12: 1347255.
4. Sedai, A., Dhakal, R., Gautam, S., Sedhain, B. K., **Thapa, B.S.**, Moussa, H., Pol, S., "Wind energy as a source of green hydrogen production in the USA", *J. Clean Energy* (2023), vol. 7, 1, 8–22.
5. **Thapa, B.S.,** Neupane, B., Yang, H., Lee, Y. H., "Green hydrogen potentials from surplus hydro energy in Nepal", *J. Hydrogen Energy* (2021), vol. 46, 43.
6. Shrestha, A., Chaudhary, C., Yadav, N.K., **Thapa B.S.**, 2023, Design and Analysis of Power Converter Topologies in Fuel Cell Applications, *Journal of Physics: Conference Series*, Vol. 2629.
7. Rajbhandari, A., **Thapa, B.S.,** 2023, An Assessment of Proton Exchange Membrane Water Electrolyzers, *Journal of Physics: Conference Series*, Vol. 2629.
8. Ghimire, A., Pandey, B., Ghimire, R., **Thapa, B.S.**, 2023, Review of Industrial Heating and Potential Low-carbon Fuels in the Context of Nepal, *Journal of Physics: Conference Series*, Vol. 2629.
9. Neupane, B., Bhattarai, S., Shah, A.K., **Thapa, B.S.**, 2022. Green Ammonia as a flexible hydro-electricity carrier for Nepal. In *IOP Conference Series: Earth and Environmental Science* (Vol. 1037, No. 1, p. 012061).
10. **B.S. Thapa**, B. Thapa, "Green Hydrogen as a Future Multi-disciplinary Research at Kathmandu University", Journal of Physics: Conference Series. Vol. 1608. No. 1. IOP Publishing, 2020.

Selected Popular Media

1. TEDx Talk – Nepal's Green Hydrogen Future, https://youtu.be/SQsYtEReAWQ
2. Business Opportunities with Green Ammonia Production in Nepal, https://www.ippan.org.np/4935
3. Integrated Green Cement and Urea Production Plant in Nepal, A Desk Study Report
4. Beyond Hydropower, Power Summit 2023, https://youtu.be/ogFJRoN0w1M
5. Energy Transition in Hindu Kush Himalaya Region, https://youtu.be/EiIJ1pgDaNc
6. Global Warming and Energy Transition, https://youtu.be/wiviOuuqvZ8
7. Cabinet approves Policy for Green Hydrogen, https://bit.ly/48S6KqQ
8. Project Ideation on Green Hydrogen, https://ghlab.ku.edu.np/publications/
9. Nepal Hydrogen Hub – The Project Incubation, https://ghlab.ku.edu.np/nhh/
10. Nepal as a Green Society", Annapurna Express, https://bit.ly/3aol2Gz
11. Can Nepal transition to a green hydrogen economy? https://bit.ly/3wNP8e6
12. KU's Green Hydrogen Production and Refueling Station inaugurated by Prime Minister, https://bit.ly/4hEgUjW
13. On Air: Exploring Nepal's Green Hydrogen, https://bit.ly/3vaifLJ
14. Green Hydrogen and its prospect in Nepal, https://bit.ly/422nJna
15. On Air with Sanjay Silwal Gupta", https://youtu.be/NAVPLaTMioY
16. On Air: Dialougs on Climate Change", https://youtu.be/zidqSXdeGWE

Public Profiles

Present Position: https://ku.edu.np/contact-detail/75
Google Scholar: https://scholar.google.ca/citations?hl=en&pli=1&user=LfHoj2oAAAAJ
Linkedin: https://www.linkedin.com/in/biraj-singh-thapa-401a7b7a/