**Athar ahmad**

**Exchange phd student, Italy**

**(Modelling of RES-microgrid with hybrid batt/H2 storage systems and EMS strategies)**

Athar Ahmad is an active PhD student from Università degli studi della Basilicata, Italy. He is an exchange visitor at the University of Houston.

**Education**

Ph.D., Ingegneria per l'innovazione e lo sviluppo sostenibile, Università degli studi della Basilicata, Italy, 2023-Present

**Topic**: *Energy management control strategies in microgrid powered by renewable energy sources with hybrid battery/hydrogen storage*

M.tech, Renewable energy science & technology, Indian Institute of engineering, science and technology, India, 2021

**Thesis:** *Thermo-mechanical deformation degradation of c-Si PV Module in operation*

B.tech, Mechanical engineering, I K Gujral Punjab technical university, India, 2018

**Research Experience**

Junior research fellow (JRF), Thapar institute of engineering & technology, India 2022

**Brief description:** Working as a JRF under Dept. of Science & Technology (DST) Govt. of India on project titled: *Development of Affordable Dust Cleaning System with High Operational Flexibility for Mega Solar Power Projects*.

**Key Responsibilities:** For smooth execution of the project involve development of the experimental facility at the Institute, product installation at the solar power plant, visiting solar plants to collect dust samples, run CFD to model nozzle, supervising fabrication of nozzles.

**professional experience**

* Research Associate, PVInsight Inc. (Head Office: Dallas, USA), India, 2023
* Business Development Manager, Solizer Pvt. Ltd., India, 2021

**Awards And Honors**

* GATE Fellowship, (AICTE, India), 2019-2021
* Research Fellowship, (DST, Govt. of India), 2022
* Tech4You Fellowship under PNRR scheme, (Tech4You, Italy), 2023-2026

**Research Interests**

* Mathematical modelling of the RES-microgrid
* Energy Management control (EMS) strategies of the microgrid
* Energy storage systems for stationery & EV applications
* Optimization of the RES-microgrid

**Publications**

* [A battery-to-electrolyzer pathway for energy management in a hybrid battery/hydrogen microgrid](https://www.google.com/url?sa=t&source=web&rct=j&opi=89978449&url=https://iopscience.iop.org/article/10.1088/1742-6596/2648/1/012094&ved=2ahUKEwi1isOdrMKIAxUA2gIHHYjlDyIQFnoECBYQAQ&usg=AOvVaw28LuCL4RG7dxdjKnfe6-1i).
* [A Nernst-Based Approach for Modeling of Lithium-Ion Batteries with Non-Flat Voltage Characteristics](https://www.mdpi.com/1996-1073/17/16/3914).

**Conferences**

* Attended a conference to present our recent research work on implementing the EMS strategies on the RES-microgrid based on various Köppen climate classifications at 78th Congresso Nazionale ATI which was held in Carpi (MO), Italy on 14-15 September 2023 under the theme: *Transizione Energetica: Ricerca Innovazione per l’Industria, le comunità ed il territorio*.