

PhD Course in Materials, Mechatronics and Systems Engineering

Research subject for an additional scholarship on reserved topic for the 41st cycle

As specified in the call, candidates who want to apply for the additional scholarship should select entry “Other” in the proper section of the online application, indicate in the specific space the title and ID of the scholarship and upload a **research project** (max. 4 pages) coherent with the topic of the scholarship.

The research project proposal must contain: i) a title, ii) an introduction to the problem with reference to the state of the art, iii) a clear description of the aim and the content of the research, iv) an estimation of the time sequence of the intended activities, v) literature references.

Important! The candidate's choice to compete also for the reserved scholarships implies a preference on his/her part for the awarding of that specific scholarship over the free ones.

Title: U - Power conversion technologies for large scale production of green hydrogen

Reference person: E. Tedeschi

Funded by: Hitachi Energy Italy S.p.A.

The goal of the PhD project is to investigate the performance, potential and limitations of current power electronic conversion technologies to feed the electrolysis process required to produce hydrogen from renewable energy resources.

The PhD candidate will further study how such technologies need to be designed and upgraded to allow the upscale of the electrolysis process to large scale, up to a power range of 800-1000 MW, while still being compliant with power quality requirements imposed by the electricity grid.