

Corso di dottorato in Fisica / PhD in Physics
Cycle 39
A. Y. 2023/2024

Borse a tematica vincolata / *Reserved scholarships*

Ph.D. Scholarship Title	Plasma-assisted hydrogen production from biomethane and biogas.
Research group link	https://greendealtrento.eu/ https://molecular.physics.unitn.it/
Contacts.:	Luca Matteo Martini (luca.martini.1@unitn.it).
Synthetic description of the activity and expected research outcome	<p>When powered by renewable energy sources, plasma-assisted thermal decomposition of biomethane/biogas is a green process that can be considered an economical route to produce CO₂-free hydrogen. The project aims to design and develop a microwave plasma reactor to assist the thermal cracking of methane and the CO₂ dry reforming process. In addition, the candidate will define the analytical methodology to detect and quantify the products at the exit of the plasma and thermal reactors. The Ph.D. student will characterize the process to understand and optimize the production mechanisms of H₂.</p> <p>This Ph.D. will be part of the H2@TN project (https://greendealtrento.eu/).</p>
The ideal candidate (skills and competencies):	<p>We are looking for a talented and motivated student with a background in experimental physics or chemical physics. Experience in the field of non-thermal plasma processing will be a plus.</p> <p>She/he should have a strong attitude to teamwork and problem-solving.</p>