

VALERIA CANDELORO

 PhD Student – Fusion Science and Engineering

 valeria.candeloro@igi.cnr.it

- Research topics**
- Plasma properties in negative ion sources for NBI systems
 - Electrostatic diagnostics for plasma investigation
 - Plasma simulation

Education

Oct 2020 – Sep 2023

PhD Fusion Science and Engineering - Università degli Studi di Padova

Project title: “Plasma Formation and expansion in SPIDER and their influence on beam extraction”

Supervisor: Dr. Emanuele Sartori

Co-supervisor: Dr. Gianluigi Serianni

Oct 2018 – Sep 2020

M.Sc. degree in Physics - Università degli Studi di Padova

Thesis title: "Modelling of plasma expansion and interpretation of measured profiles in a negative ion source "

Advisor: Dr. Gianluigi Serianni *Co-advisor:* Dr. Emanuele Sartori

Description: The plasma expansion mechanism in giant ion sources was investigated, with a particular focus on plasma uniformity. A 2D PIC-MCC code was developed and used to investigate plasma properties in SPIDER, the full-scale prototype of the ITER NBI source.

Sep 2015 – Sep 2018

B.Sc. degree in Physics - Università degli Studi di Padova

Thesis title: "Development of an electrostatic diagnostic for space charge characterization in a negative ion beam"

Advisor: Dr. Gianluigi Serianni *Co-advisor:* Dr. Emanuele Sartori

Description: The space charge compensation phenomenon of a multi-beamlet H- beam was investigated by means of a single Langmuir probe.

Publications

Co-author of:

“Analysis of current-voltage characteristics for Langmuir probes immersed in an ion beam” (DOI: <https://doi.org/10.1063/1.5128669>)

“Experimental experience and improvement of NIO1 H- source” (DOI: <https://doi.org/10.1016/j.fusengdes.2019.01.071>)