

Curriculum Vitae Angelo Giglia

Education

1999: 5 years degree in Engineering of Telecommunications at the University of Padova on the topic 'Application of the electromagnetic theory to the calculation of efficiency of diffraction gratings' (tutors Prof. G.Tondello and G.Naletto)

- 1999: Engineer of Telecommunications

2006: PHD degree in Engineering of Materials and Environment at the University of Modena and Reggio Emilia on the topic 'Optimization, diagnostics, and performances of soft x-ray multilayers' (tutor Prof. S. Nannarone).

Work experience

2000-2015: technologist for 'experiments for absorption X, reflectivity and photoemission spectroscopies with the beamline BEAR' at the synchrotron beamline BEAR @ Elettra of the CNR Laboratory TASC of Basovizza (TS):

march 2000 - april 2002 as collaborator of the project BEAR;

april 2002 to march 2008 as technologist;

april 2008 – 2020 beamline scientist with a permanent position.

Expertize

Use of Synchrotron Light for the optical and spectroscopic characterization of materials and devices, mainly in the UV-soft X rays spectral range. The main objects of his study are multilayer devices (also magnetics), organic and inorganic thin films growth on surfaces, buried interfaces, polymeric films. His main technological/scientific activities and areas of expertise are:

- characterization by means of electronic spectroscopies of surfaces as UltraViolet Photoemission Spectroscopy, X-ray Photoemission Spectroscopy and Auger electron spectroscopy, optical absorption in the UV-soft X-ray range, specular and diffuse reflectivity;
- determination of the optical constants of materials in the UV-X rays by means of different techniques as reflectivity and transmission, Kramers Kronig transform, Hunter method;
- characterization of the optical properties of materials and devices in the InfraRed-UltraViolet spectral range by means of spectroscopic ellipsometry;
- preparation of surfaces in Ultra High Vacuum; thin film monitoring; ionic bombardment; surface characterization by means of Auger electrons;
- design and development of measurements and control system in Ultra High Vacuum; knowledge of Ultra High Vacuum technology; residual gas analysis; movements in Ultra High Vacuum; electronics for quick pulse detection (amplification and detection); very low current

detection (picoammeters); light and electron detectors (channel electron multipliers, solid state diodes, Charged Couple Devices, Multi Channel Plates), single and multichannel electron analyzers; Knowledge of the main ellipsometry techniques; attendance at the '1st european school on ellipsometry'; Conceptual design, realization and data analysis of polarimetric measurements in the UV soft-X-ray spectral range using Rotating Analyzer Element Technique.