DELIVERABLE REPORT

WP11 NA – Innovation and networking activities

D11.11

Seminars provided through the web portal

31/08/2017

M24

NFFA-Europe has received funding from the EU's H2020 framework programme for research and innovation under grant agreement n. 654360

nffa.eu

PROJECT DETAILS

PROJECT ACRONYM	PROJECT TITLE
NFFA-Europe	NANOSCIENCE FOUNDRIES AND FINE ANALYSIS - EUROPE
GRANT AGREEMENT NO:	FUNDING SCHEME
654360	RIA - Research and Innovation action
START DATE	
01/09/2015	

WP DETAILS

WORK PACKAGE ID	WORK PACKAGE TITLE
WP11	NA – Innovation and networking activities

WORK PACKAGE LEADER

Ennio Capria (ESRF)

DELIVERABLE DETAILS

DELIVERABLE ID	DELIVERABLE TITLE
D11.11	Seminars provided through the web portal

DELIVERABLE DESCRIPTION

Seminars provided through the web portal

EXPECTED DATE	ESTIMATED INDICATIVE PERSONMONTHS
M24 31/08/2017	N

AUTHOR(S)

Núria Barniol (PRUAB-UAB)

PERSON RESPONSIBLE FOR THE DELIVERABLE

Ennio Capria (ESRF)

NATURE

DEC - Websites, Patent filing, Press & media actions, Videos, etc

DISSEMINATION LEVEL

- ☒ P - Public
- ☐ PP - Restricted to other programme participants & EC: (Specify)
- ☐ RE - Restricted to a group (Specify)
- ☐ CO - Confidential, only for members of the consortium

REPORT DETAILS

ACTUAL SUBMISSION DATE	NUMBER OF PAGES
18/10/2017	**6**

FOR MORE INFO PLEASE CONTACT

Núria Barniol (PRUAB-UAB) Tel. +34-93-581 13 61 Email: nuria.barniol@uab.es

Version	Date	Author(s)	Description / Reason for modification	Status
0	28/07/2017	Nuria Barniol		Draft
1	18/10/2017	Nuria Barniol		Final
				Choose an item.
				Choose an item.
				Choose an item.
				Choose an item.
				Choose an item.

Contents

Executive Summary

In this report the work done to have a set of seminars available in relation with the research areas of the NFFA-Europe project is explained (task 11.4.2). These seminars, mainly developed during the 1st NFFA Summer School, were identified and adapted to be specialised courses, useful for PhD and Master students, and also for engineers and research staff from inside and outside the consortium. These seminars were made free available through the web portal.

1. Assembling of Seminars

After a careful research on the available courses and seminars given by the scientific community, in this section we provide an explanation of the final selected seminars to be provided through the website of the NFFA-Europe.

1.1 Aim

The overall objective of these seminars is to provide a basic knowledge and capability for assessment of the usefulness of a technique applied to the field of nanotechnology. Finally the objective is to promote knowledge in academia and industry of the specialised nanotechnology and fine analysis techniques available through the NFFA-EUROPE project.

These courses where designed to provide knowledge about the different techniques available inside the NFFA-Europe consortium. They have been organised according to the 4 general Transactional Access: a) Lithography and Patterning; b) Growth and Synthesis; c) Theory and Simulation and d) Characterization. In each of these areas, tutorial seminars are provided introducing the main concepts and considerations. Also specific examples in relation with each of the techniques have been also provided to show their possibilities of the techniques in the nanotechnology area. Specific seminars were included in relation with techniques available using Synchrotron radiation. Contrary none of these seminars have been especially dedicated to the FEL and Neutron radiation sources. These topics will be included in the near future.

1.2 Identification of courses

In order to find specialized courses on the NFFA-Europe research subjects, several MOOC (Massive Open Online Courses) courses offered by some universities have been identified.

These courses aim to be useful for remote learning, but due to its duration they are not the most convenient for a rapid assessment of the usefulness of a technique for a specific research. In this sense we decided to use re-designed version of the seminars already done during the 1st NFFA Summer School. These seminars, more specifically explaining the techniques and possibilities for the above mentioned areas are preferred in the framework of the NFFA-Europe project.

1.3 Organization of courses

These courses where designed to provide knowledge about the different techniques available inside the NFFA-Europe consortium. They have been organised according to the 4 general Transactional Access: a) Lithography and Patterning; b) Growth and Synthesis; c) Theory and Simulation and d) Characterization.

In each of these areas, tutorial seminars are provided introducing the main concepts and considerations. Also specific examples in relation with each of the techniques have been also provided to show the possibilities of the techniques in the nanotechnology area. Several seminars were included in relation with techniques available using Synchrotron radiation. Additionally to try to promote the interaction between nanotechnology and fine analysis techniques, there have been 3 seminars dedicated to techniques combining both kind of facilities.

In relation with the web-site, the seminars have been hung in a specific area dedicated to NanoEducation.

2. List of seminars

All the seminars are freely available for downloading from the NFFA-Europe web-site inside the OUTCOMES → NFFA for Nano Education (see attached figure 1, as an example), at direct link:

http://www.nffa.eu/outcomes/nffa-for-nano-education/

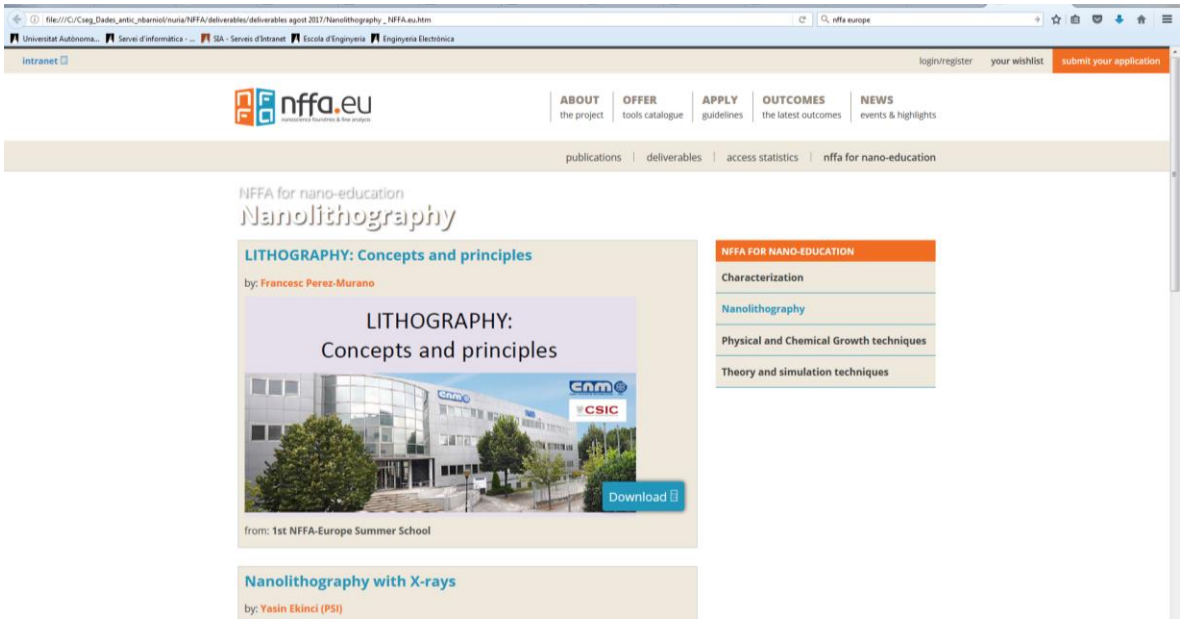

Figure 1: Front page of the Seminar on Lithography: concepts and principles

A list of available seminars is presented in Table 1.

Table 1: List of available seminars: author and title

Lithography and nanopatterning	
Francesc Pérez-Murano, CNM-CSIC (Spain)	Lithography: concepts and principles
Yasin Ekinci, PSI (Switzerland)	Nanolithography with X-rays
Christian David, PSI (Switzerland)	Nanostructures for use at Synchrotrons
Growth and Synthesis	
Mariona Coll, ICMAB-CSIC (Spain)	Chemical growth techniques: preparation of functional oxides
Florencio Sanchez, ICMAB-CSIC (Spain)	Pulsed Laser Deposition as physical growth technique

Aitor Mugarza, ICN2 (Spain)	In-situ Characterization of Nanostructures by Combining STM with X-rays
Aitor Lopeandía, UAB (Spain)	In-situ Characterization of Nanostructures by Combining STM with X-rays
	Theory and Simulations
Xavier Cartoixà, UAB (Spain)	Overview of simulation techniques at the nanoscale
Pablo Ordejón, ICN2 (Spain)	Density Functional theory (DFT)
Andrea Marini, NRC (Italy)	Post DFT techniques
Characterization	
Salvador Ferrer, Alba (Spain)	Application of Synchrotron techniques in Nanoscience
Heinz Amenistch, Elettra and University of Technology, (Austria)	In operando and high-throughput methods for research in bio and nanotechnology
Esther Barrena, ICMAB-CSIC (Spain)	Molecular film growth by Real-time X ray scattering

3. Conclusions and perspectives

Seminars devoted to all the 4 research areas of the NFFA-Europe project have been adapted and are freely available through the website at a dedicated link devoted to Nanoeducation. Each of the areas are treated in 3-4 specialized seminars: one seminar giving an overview of the technique/methodology, and two more specific seminars dedicated to practical examples and/or deeper specialization.

The already available web-seminars do not include the techniques available from FEL and Neutron radiation sources, which are also available techniques inside the NFFA-Europe consortium. These topics will be part of the 2nd Summer NFFA school (which will be held in 2018) and conveniently adapted will be incorporated also in the web-site.