DELIVERABLE REPORT

WP11 NA – Innovation and networking activities

D11.10

Educational videos

31/08/2017

M24

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nffa.eu

PROJECT DETAILS

PROJECT ACRONYM	PROJECT TITLE
NFFA-Europe	NANOSCIENCE FOUNDRIES AND FINE ANALYSIS - EUROPE
GRANT AGREEMENT NO:	FUNDING SCHEME
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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
D11.10	Educational Videos

DELIVERABLE DESCRIPTION

Educational videos: short videos describing nanotechnology techniques available in the NFFA-Europe consortium

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

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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

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Contents

Executive Summary

NFFA-Europe is a Research and Innovation Action committed to providing free access to state-of-the art tools for multidisciplinary, frontier research at the nanoscale: available techniques range from nano-characterisation to theory and numerical simulation.

With the aim to enhance the knowledge in the nanoscale area for the European research community, this deliverable explains the action towards obtaining some educational materials freely available through the web-site. This material is based on the edition of a set of short-duration Educational Videos. The videos are being designed by expert scientists in the field and edited by Promoscience. Fifteen videos have been established to cover most of the NFFA-Europe techniques: 6 videos deal with lithography techniques, 2 videos deal with chemical and physical materials growth, 2 videos deal with theory and simulation techniques and finally 5 videos deal with characterization techniques at the nanoscale.

1. Educational videos design

The design of the educational videos is being leaded by the University Autonomous of Barcelona, which has been in charge to choose the research fields and experts to provide with the information. To simplify the edition of these videos, the expert has to provide some slides with a written document for being incorporated to the slides in the form of a video presentation. The professional edition of these videos is responsibility of Promoscience.

1.1 Aim

The aim of these short and high-quality specialised educational videos is to explain the techniques dealing with nanotechnology and fine analysis of materials and devices and promote the knowledge of such techniques enhancing the competitiveness and skills of researchers and technicians. The videos with a short duration must be capable to explain the fundamentals, possibilities and main limitations of the explained techniques. The short duration (around 5 minutes) is a must, in order to convince the audience to finish the video. These videos will result in a direct output of the NFFA-Europe project.

1.2 Organization

After searching and studying the freely available videos already published in the internet, PRUAB-UAB staff has selected the topics which are more related with the techniques available inside the NFFA-Europe project. After this topic selection, specialist researchers in the technique have been contacted to see their availability to design the material for the videos.

1.3 Video structure

The video structure follows the formal scientific presentations: heading with the name and institution of the research expert; explanation of the motivation/use of the techniques; fundamentals and main achievements/limitations of the technique; some examples of tools/instruments or results of the used technique. As already said the duration of the video is around 5 minutes, thus the research expert must be limited in the number of used slides.

2. Proposed research areas for the educational videos

The research areas have been chosen according to the different technical areas available in the NFFA-Europe project:

1. LITHOGRAPHY AND NANOPATTERNING
2. GROWTH AND SYNTHESIS
3. THEORY AND SIMULATION
4. CHARACTERIZATION

In order to decide subjects and specific areas and taking into account the required short duration, a selection of techniques inside each of the above areas has been chosen. In this way not all the available techniques will be covered. At this moment only part of the videos are being designed, expecting to finish the rest of them during the 3rd year of the project. Specifically the already designed videos are in the areas of Lithography and Theory.

2.1 List of proposed Educational Videos

In the following tables, there is the list of the proposed educational videos. Table 1 is the one with all the expected videos designed by the experts. Table 2 is the list of the already available videos in the web portal. The focus of these videos is related with the techniques specifically dealing with nanotechnology. This is the reason why the number of videos dedicated to lithography and characterization is larger.

Table 1: List of proposed videos

Lithography and nanopatterning	
Video 1	Lithography concepts and overview
Video 2	Optical Lithography
Video 3	Electron Beam Lithography
Video 4	Probe Microscopy Lithography
Video 5	Bottom-up nanolithography: Direct-Self-Assembly
Video 6	Lithography with X-Rays
Growth and Synthesis	
Video 7	Overview of thin film deposition techniques: chemical
Video 8	Overview of thin film deposition techniques: physical
	Theory and Simulations
Video 9	Overview of Simulation Techniques at the Nanoscale
Video 10	Fundamentals on Density Functional Theory
Characterization	
Video 11	Scanning and Transmission Electron-Microscopy
Video 12	Scanning Probe Microscopies
Video 13	Nanocharacterization techniques based on neutrons
Video 14	Nanocharacterization techniques using X-rays
Video 15	In situ characterization of nanostructures

Table 2: List of available videos (october 2017)

Lithography and nanopatterning	
Video 2	Optical Lithography
Video 3	Electron Beam Lithography
Video 4	Probe Microscopy Lithography
Theory	
Video 9	Overview of Simulation Techniques at the Nanoscale

The short-educational videos (also available in youtube) can be found at the following link:

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

An example of the front page of one of these Educational Videos is shown in next figure 1.

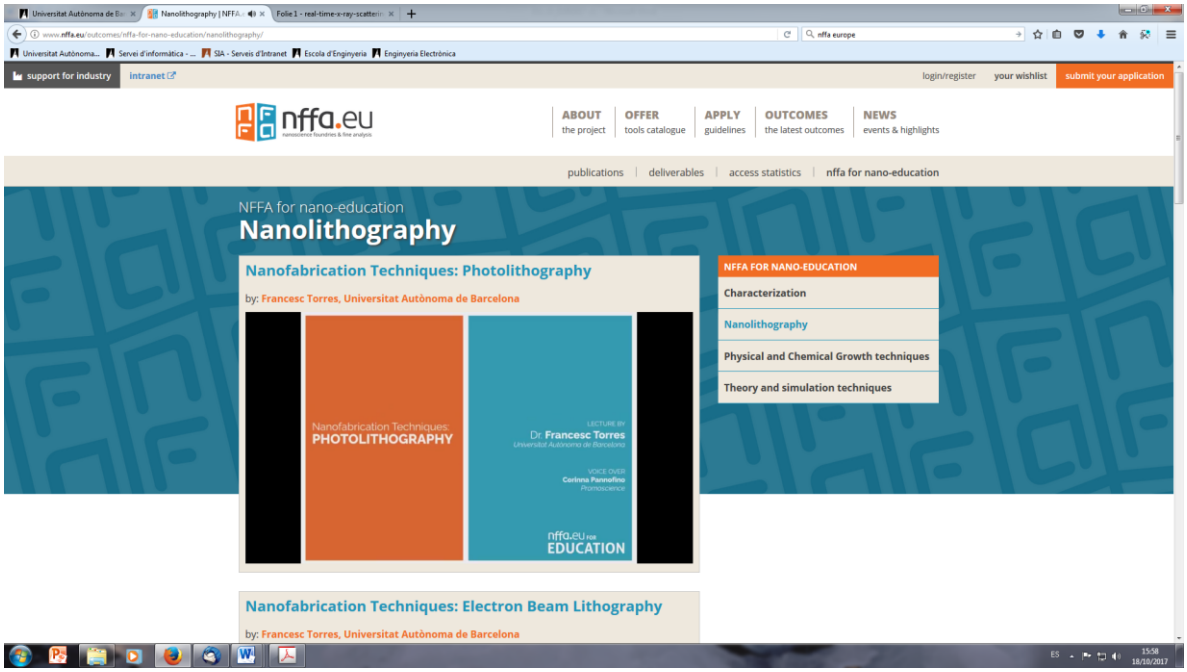

Figure 1 Front page of the Educational Video on Photolithography

3. Conclusions and perspectives

Several Educational videos have been already launched in the web-site of the NFFA-Europe web-site. It is expected that the rest of the videos will be available at the end of 2017 thus achieving the completion of the task.

During the rest of the time duration of the project, a diffusion of this material among research centres and researchers will be pursuit with the aim to broaden the knowledge of the nanotechnological techniques among European researchers. The number of video down-loadings will be also check in order to see the outreach of these educational materials.