



## МИНИСТЕРСТВО НА ОБРАЗОВАНИЕТО И НАУКАТА

Проект BG051PO001-3.1.07-0048 „Актуализиране на учебните планове и програми на специалностите във ФЕТТ, ФТК и МТФ на ТУ-София и създаване на нова съвместна магистърска специалност в съответствие с потребностите на пазара на труда“

**DESCRIPTION OF THE COURSE**

Name of the course: <b>Nano-structured oxide</b>	Code: <b>MMTN 11.2</b>	Semester: 2
Type of teaching: <b>Lectures, seminar and laboratory works</b>	Lessons per week: L-1 h, SW – 1 h, LW-2 h	Number of credits: 5

**LECTURER(S):**

Assoc. prof. PhD Valentine Videkov, phone 965 3101, e-mail: [videkov@tu-sofia.bg](mailto:videkov@tu-sofia.bg); Technical University of Sofia, Faculty of Electronics, Department "Microelectronics" and Assoc. prof. PhD Boriana Caneva, phone 9653663, e-mail: [borianatz@tu-sofia.bg](mailto:borianatz@tu-sofia.bg), Technical University of Sofia, Faculty of Electronics, Department of "Chemistry".

**COURSE STATUS IN THE CURRICULUM:**

Elective for students in "Microtechnology and nanoengineering" for the academic degree "Master".

**AIMS AND OBJECTIVES OF THE COURSE:**

The aim of the course is to familiarize students with a particular nanostructured materials, that are widely used in electronics, microelectronics and nanoelectronics.

**DESCRIPTION OF THE COURSE:**

The course covers the basic theoretical and experimental conditions for the production of anode aluminum oxide and its applications. It is considered as a material for classic applications and for specific usage for the nanoelectronics.

**PREREQUISITES:**

Basic knowledge in materials science, physics, chemistry, microelectronics, nanomaterials are necessary.

**TEACHING METHODS:**

Lectures in classical audience. There is a possibility for presenting some of the materials with multimedia resources. The course is conducted using site <http://ecad.tu-sofia.bg/ALnano>. Attending lectures is selfcontrolled by an electronic.

**METHOD OF ASSESSMENT:**

Current assessment. Evaluation is done by accumulating points from attendance of lectures, laboratories and seminar works. Attend classes gives points and additional homeworks bring extra points. Two tests are conducted.

**TEACHING LANGUAGE:**

Bulgarian with possibility for English teaching.

**BIBLIOGRAPHY:**

- 1 Сокол В.А. Электрохимическая технология гибридных интегральных микросхем Минск Бестпринт 2004 г. ISBN 985-6767-04-0.
2. Sulka G.D., Chapter 1: Highly ordered anodic Porous alumina formation by self-organized anodizing, in Nanostructured Materials in Electrochemistry, WILEY-VCH, 2008 , ISBN: 978-3-527-31876-6