



Global Science Education and Research Seminars

Campus de Rabanales



UNIVERSIDAD DE CÓRDOBA



**The Faculty of Sciences
and the University Institute for Research
in Fine Chemistry and Nanochemistry**

ENVIRONMENTAL-FRIENDLY ARCHITECTURAL WATER-BASED PAINTS FOR OUTDOOR APPLICATION



Vitali Khaletski

*Associate Professor, Department of Environmental
Engineering and Chemistry
Letter of Gratitude by The Prime-Minister of Republic of Belarus
(Brest State Technical University, Brest, Belarus)*

DATES: 29th March, 3rd April and 5th April.

PLACE AND TIME: Sala de Grados Manuel Medina
(Edif. De Gobierno - Campus de Rabanales)
15:30 – 19:30 p.m.

LECTURE 1

HISTORY AND GENERAL INFORMATION

Water-based paint as an object of multidisciplinary studying. A history and state-of-the-art of architectural paints. Environmental legislation and market of the paints. Paint as a complex system. Basic components and raw materials. Solvents. Polymeric dispersions and coalescents. Residual monomers. Silicon-modified paints. Defoamers. Dispersing agents. In-can and film preservatives. Rheology of paints. Brookfield and cone-plate viscometers. Thickeners.

LECTURE 2

PIGMENTS AND FILLERS

Pigments: general information. Light- and weather-fastness, chemical stability and compatibility. Titanium dioxide: photocatalytic activity and surface treatment. Hiding power. Fillers: talcum, calcite, quartz sand, mica, barite. Pigments in paints and in painting. Problem of blue color. Iron oxide pigments. Organic pigments. Color charts. The Natural Color System (NCS). RAL Design. How to measure color?

LECTURE 3

TESTING AND FORMULATION OF THE PAINTS

Solids. PVC (Pigment volume concentration) Grinding. Scrub resistance. Water absorption and water vapor permeability. Standards and designation code. Recipes of the paints. Future perspectives of the architectural paints.

