

Konstantinos G. Beltsios

Education and Experience

1. Chemical Engineering Diploma, NTUA, Athens, Greece, 1985
2. PhD: Materials Sc. & Eng. Dept., Northwestern U., Evanston, IL, USA. Completed: 12/1990. Minor field: Inorganic Chemistry.
3. Post-doctoral Res. Associate, Mat. Sc. & Eng. Dept, U. of Illinois at C-U, USA, 1/1991-3/1993
4. Special Scientist, Hellenic Army Research Center, Greece, 1993-1994
5. Research Associate, Inst. of Physical Chemistry, NCSR Demokritos, Greece, 1995-2001
6. Assistant Professor (areas: 'Composites, Membranes & Ceramics'), Mat. Sc. & Engineering Dept. (MS&E), U. of Ioannina (UIO), Greece, 2002-2008, Associate Professor 2008-2012, Full Professor: 2012-2019. Also: (a) Head of the 'Materials Chemistry & Technology' Graduate Program (UIO, Greece): 2015-2018, (b) Director of 'Membranes, Composites & Physical Chemistry' Laboratory (MS&E Dept, UIO, Greece).
7. Professor (of 'Composites, Membranes & Ceramics'), School of Chemical Engineering, NTUA, Greece: 2019-today.

Research Interests

Research focusing on: (a) the tailoring, fabrication, characterization and structure-property relationship of micro- and nanostructures of compact & porous polymeric, ceramic, glass, composite & electronic materials, in the form of membranes, thin layers, fibers and bulk objects.

(b) archaeological & art materials, archaeometry

Published material

118 Articles in peer-reviewed International Journals, 5 Chapters in International Books, 59 full texts in Conference Proceedings, 1 European patent. Also responsible for the development of visible & IR-camouflage paints.

Selected publications

- (1) K. Beltsios et al, 'Membrane Science and Applications', Chapter 6.2.1 in "Handbook of Porous Solids", pages 2281-2433, Ed. by F. Schueth, K. Sing and J. Weitkamp, Wiley-VCH 2002
- (2) P. Normand et al, 'Effect of annealing environment on the memory properties of thin oxides with embedded Si nanocrystals obtained by low-energy ion-beam synthesis', *Appl. Phys. Lett.*, **83**(1), 168-170, 2003
- (3) D.J. Lin, K. Beltsios et al, 'Strong effect of precursor preparation on the morphology of semicrystalline phase inversion poly(vinylidene fluoride) membranes', *Journal of Membrane Science*, **274**, 64-72, 2006
- (4) G. Romanos et al, 'Grafting of Imidazolium Based Ionic Liquid on the Pore Surface of Nanoporous Materials', *J. Phys. Chem. B*, **114**(19), 6480-6491, 2010
- (5) K. G. Beltsios et al., 'Characterisation and provenance studies of archaeological glass artifacts from Mainland and Aegean Greece', Chapter in 'Obsidian and Ancient Manufactured Glasses', New Mexico U. Press, pp. 166-184, 2012
- (6) V.A. Kosma & K.G. Beltsios, 'Simple solution routes for targeted carbonate phases and intricate carbonate and silicate morphologies', *Mat. Sc. Eng. C*, **33**, 289-297, 2013
- (7) G.P. Mastrotheodoros, K.G. Beltsios, Y. Bassiakos, 'On the Blue and Green Pigments of Post-Byzantine Greek Icons', *Archaeometry*, **62**(4), 774-795, 2020
- (8) J.F. Su, K.G. Beltsios et al., 'Facile formation of symmetric microporous PVDF membranes via vapor-induced phase separation of metastable dopes', *Colloids and Surfaces, A*, **634**, 128012, [pp. 1-11], 2022
- (9) D. Goustouridis et al, Non-Destructive Characterization of Selected Types of Films and Other Layers via White Light Reflectance Spectroscopy (WLRS), *Micro*, **2**(3), 495-507, 2022
- (10) G.P. Mastrotheodoros & K.G. Beltsios, 'Pigments - Iron-based red, yellow, and brown ochres', *Archaeological & Anthropological Sciences*, **14**(2), art. No. 35, [pp. 1-25], 2022

Educational material in Greek

(a) Textbooks: (1) Polymer Science & Technology (550 pages, 2000), (2) Composites Science & Technology (706 pages, 2010 & 2011), (3) Diffusion & Transport Phenomena (340 pages, 2009),

(b) Class Notes: Polymers (Parts I & 2: 580 pages), Phase Equilibrium & Phase Transformations (Parts 1-II & III: 1030 pages), Materials Science & Engineering Topics (230 pages), Membranes for Separations (153 pages) etc

Teaching

A. Undergraduate classes

(1) Diffusion & Transport Phenomena (UOI, Greece), (2) Composites Science & Eng. (UOI), (2) Polymer Technology (UOI), (4) Phase Transformations in Materials (UOI), (5) Bioceramics (x 1/3) and Advanced Ceramics (x 1/3) (UOI), (6) Polymer Science (x 1/2, NTUA, Greece), (7) Materials Science and Technology (x 1/3, NTUA), Composites (x 1/2, NTUA) etc

B. Graduate classes

(1) 1998/99-2007/8: Participation (ca. 25 hr/year) in the teaching of various polymer classes in the Dept. of Chemistry, National & Kapodistrian University of Athens, (2) 2004-now: Participation (18-30 hr/year) in the teaching of 3 to 4 graduate materials classes (UOI, Greece), (3) Participation (x 1/2) in the teaching of a 'Polymers & Composites' class (NTUA) etc

Supervision and reviewing

Supervisor of 8 completed PhD dissertations, 21 completed MSc Theses, 59 Completed Diploma Theses
Reviewer for 58 International Journals (Materials Science/Physics & Engineering, Chemical Engineering, Chemistry etc).

Reviewer of ca. 200 research proposals and work reports for various Greek agencies (GGET, IKY etc) and 22 proposals for international agencies.

Other interests

Indoeuropoean Linguistics, Arts, Archaeology, Pre-Socratics