

CURRICULUM VITAE

Beneduci, Amerigo

Professor

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BIBLIOMETRIC DATA:

Web of Science:

Scopus: total citations 694; h-Index 17;

Google Scholar: total citations 878; h-Index 18.

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EDUCATION:

Prof. Beneduci graduated in Chemistry (110 cum laude) at the University of Calabria (UNICAL) in 1998 and he got the title of PhD (Ph.D.) in Chemical Sciences at the same university in 2002. From 2003 to 2008 he worked in the Department of Chemistry - UNICAL as research fellow and as adjunct professor at the Faculty of Mathematical, Physical and Natural Sciences - UNICAL. After working as a process chemist at the Silva Extract company from September 2010 to April 2011, from October 2012 to November 2019 he worked as senior researcher at the Department of Chemistry and Chemical Technologies (DCTC) of the University of Calabria where he taught Advanced Thermodynamics and Chemical Kinetics, NMR spectroscopy techniques applied to metabonomics, Physical Chemistry I, Environmental Physical Chemistry and Environmental and Cultural Heritage Chemistry. He actually serves a member of the didactic commission of the DCTC and of the Academic ethical committee of UNICAL.

Since December 2019, is associate professor of chemical-physics. Prof. Beneduci is the Head of the Chemical-Physical INABEC Lab and of the Environmental Chemistry SILA Lab at the University of Calabria. He is member of the Italian Society of Chemistry and of the Italian Liquid Crystals Society. He is co-founder of the academic Spin-Off SiRIA which has the main task to do research in the environmental field in a transdisciplinary setting.

SCIENTIFIC SKILLS:

Prof. Beneduci first research interests, which began with the PhD project, concerned the study of the interaction between microwaves and biological systems, especially for the aspects related to the mechanisms of action of high frequency microwave radiation (millimeter waves), both at the molecular level and at the cellular level. Subsequently, he was involved in the qualitative-quantitative analytical study of low molecular weight metabolites in complex aqueous mixtures such as urine, plasma and other biological fluids, with Magnetic Resonance techniques Proton nuclear ($^1\text{H-NMR}$) combined with multivariate statistical analysis methods of spectral data (Metabonomic).

Since 2012, he has conducted studies on multifunctional organic materials and devices for applications in optoelectronics, achieving significant results internationally published by important scientific journals, including Nature Communications, Advanced Functional Materials, Chemistry of Materials.

Other research fields in which Prof. Beneduci is fully involved are:

1. processes for the extraction of natural fibers and the production of biocomposites based on natural fibers for the construction, automotive, furniture and textile industries;
2. materials and processes for the purification of water polluted by heavy metals and toxic organic compounds.
3. Basic study of metal complexes (Al, Fe, Hg) with natural organic compounds.

LIST OF PUBLICATIONS

2020

Capodilupo, A.-L., Manni, F., Corrente, G.A., Accorsi, G., Fabiano, E., Cardone, A., Giannuzzi, R., Beneduci, A., Gigli, G. Arylamino-fluorene derivatives: Optically induced electron transfer investigation, redox-controlled modulation of absorption and fluorescence

(2020) Dyes and Pigments, 177, art. no. 108325.

Capolongo, G., Zacchia, M., Beneduci, A., Costantini, S., Cinque, P., Spasiano, A., De Luca, G., Di Pietro, M.E., Ricchi, P., Trepiccione, F., Capasso, G., Filosa, A. Urinary metabolic profile of patients with transfusion-dependent β -thalassemia major undergoing deferasirox therapy

(2020) Kidney and Blood Pressure Research, 45 (3), pp. 455-466.

Veltri, F., Alessandro, F., Scarcello, A., Beneduci, A., Polanco, M.A., Perez, D.C., Gomez, C.V., Tavolaro, A., Giordano, G., Caputi, L.S. Porous carbon materials obtained by the hydrothermal carbonization of orange juice (2020) Nanomaterials, 10 (4), art. no. 655.

2019

Veltri, L., Cavallo, G., Beneduci, A., et al. Synthesis and thermotropic properties of new green electrochromic ionic liquid crystals. *New J Chem*, DOI:10.1039/c9nj03303c.

Beneduci, A., Corrente, G.A., Marino, T., Aiello, D., Bartella, L., Di Donna, L., Napoli, A., Russo, N., Romeo, I., Furia, E.

Insight on the chelation of aluminum(III) and iron(III) by curcumin in aqueous solution
(2019) *Journal of Molecular Liquids*, 296, art. no. 111805.

Tursi, A., De Vietro, N., Beneduci, A., Milella, A., Chidichimo, F., Fracassi, F., Chidichimo, G.
Low pressure plasma functionalized cellulose fiber for the remediation of petroleum hydrocarbons polluted water
(2019) *Journal of Hazardous Materials*, 373, pp. 773-782.

Corrente, G.A., Fabiano, E., La Deda, M., Manni, F., Gigli, G., Chidichimo, G., Capodilupo, A.-L., Beneduci, A.

High-Performance Electrofluorochromic Switching Devices Using a Novel Arylamine-Fluorene Redox-Active Fluorophore
(2019) *ACS Applied Materials and Interfaces*, 11 (13), pp. 12202-12208.

Beneduci, A., Corrente, G.A., Chidichimo, G.

Chapter 9: Electrochromic and Electrofluorescence Liquid Crystals
(2019) *RSC Smart Materials*, 2019-January (33), pp. 261-292.

De Vietro, N., Tursi, A., Beneduci, A., Chidichimo, F., Milella, A., Fracassi, F., Chatzisyneon, E., Chidichimo, G.

Photocatalytic inactivation of Escherichia coli bacteria in water using low pressure plasma deposited TiO₂ cellulose fabric
(2019) *Photochemical and Photobiological Sciences*, 18 (9), pp. 2248-2258.

Pibiri, I., Beneduci, A., Carraro, M., Causin, V., Casella, G., Corrente, G.A., Chidichimo, G., Pace, A., Riccobono, A., Saielli, G.

Mesomorphic and electrooptical properties of viologens based on non-symmetric alkyl/polyfluoroalkyl functionalization and on an oxadiazolyl-extended bent core
(2019) *Journal of Materials Chemistry C*, 7 (26), pp. 7974-7983.

2018

Chidichimo, G., Beneduci, A., Maltese, V., Cospito, S., Tursi, A., Tassini, P., Pandolfi, G.
2D/3D switchable displays through PDLC reverse mode parallax barrier
(2018) *Liquid Crystals*, 45 (13-15), pp. 2132-2138.

Tursi, A., Chatzisyneon, E., Chidichimo, F., Beneduci, A., Chidichimo, G.

Removal of endocrine disrupting chemicals from water: Adsorption of bisphenol-a by biobased hydrophobic functionalized cellulose

(2018) *International Journal of Environmental Research and Public Health*, 15 (11), art. no. 2419.

Corrente, G.A., Fabiano, E., Manni, F., Chidichimo, G., Gigli, G., Beneduci, A., Capodilupo, A.-L. Colorless to All-Black Full-NIR High-Contrast Switching in Solid Electrochromic Films Prepared with Organic Mixed Valence Systems Based on Dibenzofulvene Derivatives

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Tursi, A., Beneduci, A., Chidichimo, F., De Vietro, N., Chidichimo, G.

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(2018) *Chemosphere*, 201, pp. 530-539.

Fasanella, A., Cosentino, K., Beneduci, A., Chidichimo, G., Cazzanelli, E., Barberi, R.C., Castriota, M.

Thermal structural evolutions of DMPC-water biomimetic systems investigated by Raman Spectroscopy

(2018) *Biochimica et Biophysica Acta - Biomembranes*, 1860 (6), pp. 1253-1258.

Molinari, A., Mayacela Rojas, C.M., Beneduci, A., Tavolaro, A., Rivera Velasquez, M.F., Fallico, C.

Adsorption performance analysis of alternative reactive media for remediation of aquifers affected by heavy metal contamination

(2018) *International Journal of Environmental Research and Public Health*, 15 (5), art. no. 980.

Chidichimo, G., Dalena, F., Rizza, A., Beneduci, A.

Insect-Infested Wood Remediation by Microwave Heating and Its Effects on Wood Dehydration: A Case Study of *Hylotrupes bajulus* Larva

(2018) *Studies in Conservation*, 63 (2), pp. 97-103.

Furia, E., Beneduci, A., Russo, N., Marino, T.

Structural characterization of aluminium(III) and iron(III) complexes of coumarinic acid in aqueous solutions from combined experimental and theoretical investigations

(2018) *New Journal of Chemistry*, 42 (13), pp. 11006-11012.

2017

Cesario, D., Furia, E., Mazzone, G., Beneduci, A., De Luca, G., Sicilia, E.

Complexation of Al³⁺ and Ni²⁺ by L-Ascorbic Acid: An Experimental and Theoretical Investigation

(2017) *Journal of Physical Chemistry A*, 121 (51), pp. 9773-9781.

Beneduci, A., Dalena, F., De Simone, B.C., Lania, I., De Filpo, G., Gallucci, M.C., Chidichimo, G.

An Insightful Theoretical Interpretation of Paper pH Surface Electrode Data Reveals a New Paradigm for the Definition of Paper Acidity

(2017) *Journal of Physical Chemistry C*, 121 (45), pp. 25180-25186.

De Filpo, G., Mashin, A.I., Beneduci, A., Chidichimo, G.

Reduced OFF-axis haze in polymer-dispersed liquid crystals

(2017) *Liquid Crystals*, 44 (9), pp. 1477-1483.

Beneduci, A., Furia, E., Russo, N., Marino, T.

Complexation behaviour of caffeic, ferulic and p-coumaric acids towards aluminium cations: A combined experimental and theoretical approach

(2017) *New Journal of Chemistry*, 41 (12), pp. 5182-5190.

Arias Arias, F.E., Beneduci, A., Chidichimo, F., Furia, E., Straface, S.

Study of the adsorption of mercury (II) on lignocellulosic materials under static and dynamic conditions

(2017) *Chemosphere*, 180, pp. 11-23.

Beneduci, A., Corrente, G.A., Fabiano, E., Maltese, V., Cospito, S., Ciccarella, G., Chidichimo, G., Gigli, G., Capodilupo, A.-L.

Orthogonal electronic coupling in multicentre arylamine mixed-valence compounds based on a dibenzofulvene-thiophene conjugated bridge

(2017) *Chemical Communications*, 53 (64), pp. 8960-8963.

2016

Veltri, L., Maltese, V., Auriemma, F., Santillo, C., Cospito, S., La Deda, M., Chidichimo, G., Gabriele, B., De Rosa, C., Beneduci, A.

Mesophase Tuning in Discotic Dimers π -Conjugated Ionic Liquid Crystals through Supramolecular Interactions and the Thermal History

(2016) *Crystal Growth and Design*, 16 (10), pp. 5646-5656.

Chidichimo, G., Aloise, A., Beneduci, A., De Rango, A., Pingitore, G., Furgiuele, F., Valentino, P.

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(2016) *Polymer Composites*, 37 (10), pp. 3042-3049.

Maltese, V., Cospito, S., Beneduci, A., De Simone, B.C., Russo, N., Chidichimo, G., Janssen, R.A.J.

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(2016) *Chemistry - A European Journal*, 22 (29), pp. 10179-10186.

2015

Cospito, S., Beneduci, A., Veltri, L., Salamonczyk, M., Chidichimo, G.
Mesomorphism and electrochemistry of thienoviologen liquid crystals
(2015) *Physical Chemistry Chemical Physics*, 17 (27), pp. 17670-17678.

Matafora, V., Cuccurullo, M., Beneduci, A., Petrazzuolo, O., Simeone, A., Anastasio, P., Mignani, R., Feriozzi, S., Pisani, A., Comotti, C., Bachi, A., Capasso, G.
Early markers of Fabry disease revealed by proteomics
(2015) *Molecular BioSystems*, 11 (6), pp. 1543-1551.

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(2015) *Molecular Crystals and Liquid Crystals*, 610 (1), pp. 108-115.

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(2015) *Advanced Functional Materials*, 25 (8), pp. 1240-1247.

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Woodworm disinfestation of wooden artifacts by vacuum techniques
(2015) *Conservation Science in Cultural Heritage*, 15 (1), pp. 267-272.

2014

Beneduci, A., Cosentino, K., Romeo, S., Massa, R., Chidichimo, G.
Effect of millimetre waves on phosphatidylcholine membrane models: A non-thermal mechanism of interaction
(2014) *Soft Matter*, 10 (30), pp. 5559-5567.

Beneduci, A., Cospito, S., La Deda, M., Veltri, L., Chidichimo, G.
Electrofluorochromism in π -conjugated ionic liquid crystals
(2014) *Nature Communications*, 5, art. no. 3105.

Chidichimo, G., De Simone, B.C., Imbardelli, D., De Benedittis, M., Barberio, M., Ricciardi, L., Beneduci, A.
Influence of oxygen impurities on the electrochromic response of viologen-based plastic films
(2014) *Journal of Physical Chemistry C*, 118 (25), pp. 13484-13492.

2013

Beneduci, A., Cosentino, K., Chidichimo, G.
Millimeter wave radiations affect membrane hydration in phosphatidylcholine vesicles
(2013) *Materials*, 6 (7), pp. 2701-2712.

Cospito, S., De Simone, B.C., Beneduci, A., Imbardelli, D., Chidichimo, G.

Novel electrochromic gel with high optical contrast in the visible and near-infrared
(2013) *Materials Chemistry and Physics*, 140 (2-3), pp. 431-434.

Cosentino, K., Beneduci, A., Ramundo-Orlando, A., Chidichimo, G.
The influence of millimeter waves on the physical properties of large and giant unilamellar vesicles
(2013) *Journal of Biological Physics*, 39 (3), pp. 395-410.

Beneduci, A., Cospito, S., Crispini, A., Gabriele, B., Nicoletta, F.P., Veltri, L., Chidichimo, G.
Switching from columnar to calamitic mesophases in a new class of rod-like thienoviologens
(2013) *Journal of Materials Chemistry C*, 1 (11), pp. 2233-2240.

2012

Beneduci, A., Costa, I., Chidichimo, G.
Use of iron (II) salts and complexes for the production of soil amendments from organic solid wastes
(2012) *International Journal of Chemical Engineering*, art. no. 701728.

Beneduci, A., Chidichimo, G.
Open-ended waveguide measurement and numerical simulation of the reflectivity of petri dish supported skin cell monolayers in the mm-wave range
(2012) *Journal of Infrared, Millimeter, and Terahertz Waves*, 33 (5), pp. 529-547.

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Microwave induced shift of the main phase transition in phosphatidylcholine membranes
(2012) *Bioelectrochemistry*, 84, pp. 18-24.

2011

Beneduci, A., Chidichimo, G., Dardo, G., Pontoni, G.
Highly routinely reproducible alignment of ¹H NMR spectral peaks of metabolites in huge sets of urines
(2011) *Analytica Chimica Acta*, 685 (2), pp. 186-195.

2010

Beneduci, A., Cuccurullo, M., Pontoni, G., Chidichimo, G., Capasso, G.
Perspectives of ¹H-NMR-based urinary metabonomics in fabry disease
(2010) *Journal of Nephrology*, 23 (SUPPL.16), pp. S213-S220.

Cuccurullo, M., Beneduci, A., Anand, S., Mignani, R., Cianciaruso, B., Bachi, A., Capasso, G.
Fabry disease: Perspectives of urinary proteomics
(2010) *Journal of Nephrology*, 23 (SUPPL.16), pp. S199-S212.

D'Adamo, P., Ulivi, S., Beneduci, A., Pontoni, G., Capasso, G., Lanzara, C., Andrighetto, G., Hladnik, U., Nunes, V., Palacin, M., Gasparini, P.

Metabonomics and population studies: Age-related amino acids excretion and inferring networks through the study of urine samples in two Italian isolated populations
(2010) *Amino Acids*, 38 (1), pp. 65-73.

2009

Beneduci, A.

Evaluation of the potential in vitro antiproliferative effects of millimeter waves at some therapeutic frequencies on RPMI 7932 human skin malignant melanoma cells
(2009) *Cell Biochemistry and Biophysics*, 55 (1), pp. 25-32.

Ramundo-Orlando, A., Longo, G., Cappelli, M., Girasole, M., Tarricone, L., Beneduci, A., Massa, R.

The response of giant phospholipid vesicles to millimeter waves radiation
(2009) *Biochimica et Biophysica Acta - Biomembranes*, 1788 (7), pp. 1497-1507.

2008

Beneduci, A.

Which is the effective time scale of the fast Debye relaxation process in water?
(2008) *Journal of Molecular Liquids*, 138 (1-3), pp. 55-60.

2007

Beneduci, A., Chidichimo, G., Tripepi, S., Perrotta, E., Cufone, F.

Antiproliferative effect of millimeter radiation on human erythromyeloid leukemia cell line K562 in culture: Ultrastructural- and metabolic-induced changes
(2007) *Bioelectrochemistry*, 70 (2), pp. 214-220.

2005

Beneduci, A., Chidichimo, G., Tripepi, S., Perrotta, E.

Transmission electron microscopy study of the effects produced by wide-band low-power millimeter waves on MCF-7 human breast cancer cells in culture
(2005) *Anticancer Research*, 25 (2 A), pp. 1009-1013.

Beneduci, A., Chidichimo, G., De Rose, R., Filippelli, L., Straface, S.V., Venuta, S.

Frequency and irradiation time-dependant antiproliferative effect of low-power millimeter waves on RPMI 7932 human melanoma cell line
(2005) *Anticancer Research*, 25 (2 A), pp. 1023-1028.

2002

Chidichimo, G., Beneduci, A., Nicoletta, M., Critelli, M., De Rose, R., Tkatchenko, Y., Abonante, S., Tripepi, S., Perrotta, E.

Selective inhibition of tumoral cells growth by low power millimeter waves

(2002) Anticancer Research, 22 (3), pp. 1681-1688.

Selected contributions as speaker to congresses and workshops of the last three years:

- ✓ Beneduci, Ad hoc cellulose surface functionalization for water remediation: efficient adsorption of either hydrophobic organic or heavy metal ion pollutants. 3rd International Caparica Conference on Pollutant Toxic Ions & Molecules 2019, 4th - 7th November 2019 Caparica, Portugal (**Invited speaker**).
- ✓ Beneduci, A. Electrochromic and electrofluorochromic devices based on small organic mixed valence compounds. Energy Materials Nanotechnology Meeting (EMN Meeting), May 13 to 17, 2019 in Rome, Italy (**Invited speaker**).
- ✓ Beneduci, A. Organics mixed valence compounds for electrochromic and electrofluorescence applications. Società Chimica Italiana. Congresso Congiunto delle Sezioni Sicilia e Calabria, Catania 2018 (**Plenary speaker**).
- ✓ Beneduci, A. Fluorescent switchable devices based on thienoviologen liquid crystals. 9th Italian-Japanese Workshop on Liquid Crystals, Pavia (Italy), September 17th to September 20th, 2018 (**Invited speaker**).
- ✓ Beneduci, A. Electronic coupling in H-shaped tetracenters-arylamine mixed valence compounds. Società Chimica Italiana. XXVI Congresso Nazionale della Divisione di Chimica Fisica. 10-14 Settembre, 2017, Paestum (SA) (**speaker**).