

Emer Mbiemër: **Arben Merkoçi**  
Datëlindje: **14.06.1961**  
Vendlindje: **Tiranë**  
Viti i zgjedhjes: **2008**  
Sekzioni: **Shkencat natyrore dhe teknike**  
**Gjuhët:** **Anglisht, spanjisht, italisht, katalan, frëngjisht**



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## CV e shkurtër

Prof. Arben Merkoçi mbaroi studimet në degën Kimi Industriale (1986) dhe fitoi titullin "Doktor i shkencave" (1991) në Fakultetin e Shkencave të Natyrës të Universitetit të Tiranës. Më pas, kreu studime postdoktorate (1991-2002) në Hungari, Greqi, Itali, Spanjë dhe SHBA, duke kryer kërkime shkencore në fushën e biosensorëve dhe nanoteknologjisë. Në vitin 2008 mori titullin "Profesor" ICREA ([www.icrea.es](http://www.icrea.es)) në Spanjë dhe u zgjodh Anëtar i Akademisë së Shkencave të Shqipërisë. Aktualisht, prof. Merkoçi është drejtor i Grupit të Nanobioelektronikës dhe Biosensorëve ([www.nanobiosensors.org](http://www.nanobiosensors.org)) në Institutin Katalan të Nanoshkencës dhe Nanoteknologjisë (ICN2, [www.icn.cat](http://www.icn.cat)) në Spanjë. Studimet e tij janë të drejtuara në fushën e dizenjimit, përgatitjes dhe aplikimit të nanobiosensorëve në fushat e diagnostikimit klinik, monitorimit të mjedisit dhe sigurisë së ushqimeve dhe aplikime të tjera industriale. Prof. Merkoçi është editor i "Biosensors and Bioelectronics", revista më prestigjioze në fushën e biosensorëve dhe anëtar i bordit të disa revistave si "Electroanalysis", "Microchimica Acta" etj.

Prof. Merkoçi ka botuar mbi 200 artikuj në revista shkencore ndërkombëtare dhe ka udhëhequr (ose në proces) mbi 30 teza doktorature. Ka drejtar e koordinuar dhjetëra projekte kombëtare dhe ndërkombëtare dhe ka shërbyer si anëtar i bordeve të vlerësimit të projekteve të Komunitetit European dhe agjencive të tjera ndërkombëtare.

## Publikime

2015

Marisol Espinoza-Castañeda, Alfredo de la Escosura-Muñiz, Alejandro Chamorro, Carmen de Torres, Arben Merkoçi (2015). Nanochannel array device operating through Prussian blue nanoparticles for sensitive label-free immunodetection of a Cancer biomarker. *Biosensors & Bioelectronics*. 67, , 107-114  
<http://www.sciencedirect.com/science/article/pii/S0956566314005405>

Gisele Elias Nunes-Pauli, Alfredo de la Escosura-Muñiz, Claudio Parolo, Ivan H Bechtold and Arben Merkoçi (2015). Lab-in-a-syringe using gold nanoparticles for rapid immunosensing of protein biomarkers.. *Lab on a Chip*. 15, 2, 399-405  
<http://pubs.rsc.org/en/content/articlelanding/2014/lc/c4lc01123f#!divAbstract>

Abdel-Rahim Hussein Abdel-Azzem Hassan, Alfredo de la Escosura-Muñiz, Arben Merkoçi (2015). Highly Sensitive and Rapid Determination of Escherichia coli O157:H7 in Minced Beef and Water using Electrocatalytic Gold Nanoparticle Tags. *Biosensors & Bioelectronics*. 67, 511-515  
<http://www.sciencedirect.com/science/article/pii/S0956566314007064>

Carmen C. Mayorga-Martinez , Alejandro Chamorro-García, Arben Merkoçi (2015). Electrochemical impedance spectroscopy (bio) sensing through hydrogen evolution reaction induced by gold nanoparticles. *Biosensors & Bioelectronics*. 67, 53-58  
<http://www.sciencedirect.com/science/article/pii/S0956566314004138>

Sevinc Kurbanoglu, Carmen C. Mayorga-Martinez, Mariana Medina-Sánchez, Lourdes Rivas, Sibel A. Ozkan, Arben Merkoçi (2015). Antithyroid drug detection using an enzyme cascade blocking in a nanoparticle-based lab-on-a-chip system. *Biosensors & Bioelectronics*. 67, 670-676  
<http://www.sciencedirect.com/science/article/pii/S095656631400801X>

Alfredo de la Escosura-Muñiz, Zdenek Plichta, Daniel Horák, Arben Merkoçi (2015). Alzheimer's disease biomarkers detection in human samples by efficient capturing through porous magnetic microspheres and labelling with electrocatalytic gold nanoparticles. *Biosensors & Bioelectronics*. 67, 162-169  
<http://www.sciencedirect.com/science/article/pii/S0956566314005892>

Ravalli, A.; Rivas, L.; de la Escosura-Muniz, Alfredo; Pons, J.; Merkoçi, A.; Marazza, G. (2015). A DNA Aptasensor for Electrochemical Detection of Vascular Endothelial Growth Factor. *JOURNAL OF NANOSCIENCE AND NANOTECHNOLOGY*. 15, 5, 3411-3416

Monton, Helena; Parolo, Claudio; Aranda-Ramos, Antonio; Merkoçi, Arben; Nogues, Carme (2015). Annexin-V/quantum dot probes for multimodal apoptosis monitoring in living cells: improving bioanalysis using electrochemistry. *NANOSCALE*. 7, 9, 4097-4104

2014

Mayorga-Martinez, Carmen C.; Hlavata, Lenka; Miserere, Sandrine; Lopez-Marzo, Adaris; Labuda, Jan; Pons, Josefina; Merkoçi, Arben (2014). An integrated phenol 'sensoremoval' microfluidic nanostructured

platform. *BIOSENSORS & BIOELECTRONICS*. 55, 355-359  
<http://www.sciencedirect.com/science/article/pii/S0956566313009068>

Medina-Sanchez, Mariana; Miserere, Sandrine; Morales-Narvaez, Eden; Merkoçi, Arben (2014). On-chip magneto-immunoassay for Alzheimer's biomarker electrochemical detection by using quantum dots as labels. *BIOSENSORS & BIOELECTRONICS*. 54, 279-284  
<http://www.sciencedirect.com/science/article/pii/S0956566313007719>

Mayorga-Martinez, Carmen C.; Pino, Flavio; Kurbanoglu, Sevinc; Rivas, Lourdes; Ozkan, Sibel A.; Merkoçi, Arben (2014). Iridium oxide nanoparticle induced dual catalytic/inhibition based detection of phenol and pesticide compounds. *JOURNAL OF MATERIALS CHEMISTRY B*. 2, 16, 2233-2239  
<http://pubs.rsc.org/en/Content/ArticleLanding/2014/TB/C3TB21765E#!divAbstract>

Palomar-Pardave, M.; Corona-Avendano, S.; Romero-Romo, M.; Alarcon-Angeles, G.; Merkoçi, A.; Ramirez-Silva, M. T. (2014). Supramolecular interaction of dopamine with beta-cyclodextrin: An experimental and theoretical electrochemical study. *JOURNAL OF ELECTROANALYTICAL CHEMISTRY*. 717, 103-109 <http://www.sciencedirect.com/science/article/pii/S1572665714000095>

Rivas, Lourdes; de la Escosura-Muniz, Alfredo; Pons, Josefina; Merkoçi, Arben (2014). Alzheimer Disease Biomarker Detection Through Electrocatalytic Water Oxidation Induced by Iridium Oxide Nanoparticles. *ELECTROANALYSIS*. 26, 6, 1287-1294 <http://onlinelibrary.wiley.com/doi/10.1002/elan.201400027/abstract>

Merkoçi, Arben (2014). Electroanalysis-Based Clinical Diagnostics. *ELECTROANALYSIS*. 26, 6, 1110-1110  
<http://onlinelibrary.wiley.com/doi/10.1002/elan.201410132/abstract>

Lopez-Marzo, Adaris M.; Pons, Josefina; Merkoçi, Arben (2014). Extremely fast and high Pb<sup>2+</sup> removal capacity using a nanostructured hybrid material. *JOURNAL OF MATERIALS CHEMISTRY A*. 2, 23, 8766-8772 <http://pubs.rsc.org/en/content/articlelanding/2014/ta/c4ta00985a#!divAbstract>

Baptista-Pires, Luis; Perez-Lopez, Briza; Mayorga-Martinez, Carmen C.; Morales-Narvaez, Eden; Domingo, Neus; Esplandiu, Maria Jose; Alzina, Francesc; Sotomayor-Torres, Clivia M.; Merkoçi, Arben (2014). Electrocatalytic tuning of biosensing response through electrostatic or hydrophobic enzyme-graphene oxide interactions. *BIOSENSORS & BIOELECTRONICS*. 61, 655-662  
<http://www.sciencedirect.com/science/article/pii/S0956566314003613>

Morales-Narvaez, Eden; Guix, Maria; Medina-Sanchez, Mariana; Mayorga-Martinez, Carmen C.; Merkoçi, Arben (2014). Micromotor Enhanced Microarray Technology for Protein Detection. *SMALL*. 10, 13, 2542-2548 <http://onlinelibrary.wiley.com/doi/10.1002/smll.201303068/abstract>

Rivas, Lourdes; Medina-Sanchez, Mariana; de la Escosura-Muniz, Alfredo; Merkoci, Arben (2014). Improving sensitivity of gold nanoparticle-based lateral flow assays by using wax-printed pillars as delay barriers of microfluidics. *LAB ON A CHIP*. 14, 22, 4406-4414  
<http://pubs.rsc.org/en/content/articlelanding/2014/lc/c4lc00972j#!divAbstract>

Medina-Sanchez, Mariana; Martinez-Domingo, Carme; Ramon, Eloi; Merkoçi, Arben (2014). An Inkjet-Printed Field-Effect Transistor for Label-Free Biosensing. *ADVANCED FUNCTIONAL MATERIALS.* 24, 40, 6291-6302  
<http://onlinelibrary.wiley.com/doi/10.1002/adfm.201401180/abstract;jsessionid=D548D40EFCADAC7F638638FE6AFB27D8.f01t01>

Fattah, Ali; Khatami, Saeid; Mayorga-Martinez, Carmen C.; Medina-Sanchez, Mariana; Baptista-Pires, Luis; Merkoci, Arben (2014). Graphene/Silicon Heterojunction Schottky Diode for Vapors Sensing Using Impedance Spectroscopy. *SMALL.* 10, 20, 4193-4199  
<http://onlinelibrary.wiley.com/doi/10.1002/smll.201400691/abstract>

Geroncio da Silva, Everson Thiago Santos; Miserere, Sandrine; Kubota, Lauro Tatsuo; Merkoçi, Arben (2014). Simple On-Plastic/Paper Inkjet-Printed Solid-State Ag/AgCl Pseudoreference Electrode. *ANALYTICAL CHEMISTRY.* 86, 21, 10531-10534

2013

Mayorga-Martinez, Carmen C.; Cadevall, Miquel; Guix, Maria; Ros, Josep; Merkoçi, Arben (2013). Bismuth nanoparticles for phenolic compounds biosensing application. *BIOSENSORS & BIOELECTRONICS.* 40, 1, 57-62

Espinoza-Castaneda, Marisol; de la Escosura-Muniz, Alfredo; Gonzalez-Ortiz, Gemma; Martin-Orue, Susana M.; Francisco Perez, Jose; Merkoçi, Arben (2013). Casein modified gold nanoparticles for future theranostic applications. *BIOSENSORS & BIOELECTRONICS.* 40, 1, 271-276

Afonso, Andre S.; Perez-Lopez, Briza; Faria, Ronaldo C.; Mattoso, Luiz H. C.; Hernandez-Herrero, Manuela; Xavier Roig-Sagues, Artur; Maltez-da Costa, Marisa; Merkoçi, Arben (2013). Electrochemical detection of *Salmonella* using gold nanoparticles. *BIOSENSORS & BIOELECTRONICS.* 40, 1, 121-126

Parolo, Claudio; de la Escosura-Muniz, Alfredo; Merkoçi, Arben (2013). Enhanced lateral flow immunoassay using gold nanoparticles loaded with enzymes. *BIOSENSORS & BIOELECTRONICS.* 40, 1, 412-416

de la Escosura-Muniz, Alfredo; Chunglok, Wilanee; Surareungchai, Werasak; Merkoçi, Arben (2013). Nanochannels for diagnostic of thrombin-related diseases in human blood. *BIOSENSORS & BIOELECTRONICS.* 40, 1, 24-31

Parolo, Claudio; Medina-Sanchez, Mariana; de la Escosura-Muniz, Alfredo; Merkoçi, Arben (2013). Simple paper architecture modifications lead to enhanced sensitivity in nanoparticle based lateral flow immunoassays. *LAB ON A CHIP.* 13, 3, 386-390

Garcia, Miguel; Orozco, Jahir; Guix, Maria; Gao, Wei; Sattayasamitsathit, Sirilak; Escarpa, Alberto; Merkoçi, Arben; Wang, Joseph (2013). Micromotor-based lab-on-chip immunoassays. *NANOSCALE.* 5, 4, 1325-1331

Lopez Marzo, Adaris M.; Pons, Josefina; Blake, Diane A.; Merkoçi, Arben (2013). All-Integrated and Highly Sensitive Paper Based Device with Sample Treatment Platform for Cd<sup>2+</sup> Immunodetection in Drinking/Tap Waters. *ANALYTICAL CHEMISTRY*. 85, 7, 3532-3538

Placido, Tiziana; Aragay, Gemma; Pons, Josefina; Comparelli, Roberto; Curri, M. Lucia; Merkoçi, Arben (2013). Ion-Directed Assembly of Gold Nanorods: A Strategy for Mercury Detection. *ACS APPLIED MATERIALS & INTERFACES*. 5, 3, 1084-1092

Mars, Abdelmoneim; Parolo, Claudio; Raouafi, Noureddine; Boujlel, Khaled; Merkoçi, Arben (2013). Gold nanoparticles decorated with a ferrocene derivative as a potential shift-based transducing system of interest for sensitive immunosensing. *JOURNAL OF MATERIALS CHEMISTRY B*. 1, 23, 2951-2955

Lopez-Marzo, Adaris M.; Pons, Josefina; Blake, Diane A.; Merkoci, Arben (2013). High sensitive gold-nanoparticle based lateral flow Immunodevice for Cd<sup>2+</sup> detection in drinking waters. *BIOSENSORS & BIOELECTRONICS*. 47, 190-198

Alvarez-Diduk, Ruslan; Teresa Ramirez-Silva, Maria; Galano, Annia; Merkoçi, Arben (2013). Deprotonation Mechanism and Acidity Constants in Aqueous Solution of Flavonols: a Combined Experimental and Theoretical Study. *JOURNAL OF PHYSICAL CHEMISTRY B*. 117, 41, 12347-12359

Lopez Marzo, Adaris M.; Pons, Josefina; Merkoçi, Arben (2013). Multifunctional system based on hybrid nanostructured rod formation, for sensoremoval applications of Pb<sup>2+</sup> as a model toxic metal. *JOURNAL OF MATERIALS CHEMISTRY A*. 1, 43, 13532-13541

Parolo, Claudio; de la Escosura-Muniz, Alfredo; Polo, Ester; Grazu, Valeria; de la Fuente, Jesus M.; Merkoci, Arben (2013). Design, Preparation, and Evaluation of a Fixed-Orientation Antibody/Gold-Nanoparticle Conjugate as an Immunosensing Label. *ACS APPLIED MATERIALS & INTERFACES*. 5, 21, 10753-10759

Parolo, Claudio; Medina-Sanchez, Mariana; Monton, Helena; de la Escosura-Muniz, Alfredo; Merkoci, Arben (2013). Paper-Based Electrodes for Nanoparticle Detection. *PARTICLE & PARTICLE SYSTEMS CHARACTERIZATION*. 30, 8, 662-666

Raquel Güell; Claudia Fontàs; Gemma Aragay; Arben Merkoçi; Enriqueta Anticó (2013). Screen-printed electrodes incorporated in a flow system for the decentralized monitoring of lead, cadmium and copper in natural and wastewater samples. *International Journal of Environmental Analytical Chemistry*. 93 (8), 872-883

Carmen C. Mayorga Martínez; Lenka Hlavata; Sandrine Miserere; Adaris López Marzo; Jan Labuda; Josefina Pons; Arben Merkoçi (2013). Nanostructured CaCO<sub>3</sub>-PEI microparticles for phenol sensing in fluidic microsystem. *Electrophoresis*. 34 (14), 2011-2016.

2012

Gemma Aragay, Georgina Alarcón, Josefina Pons, Mercè Font-Bardía, Arben Merkoçi (2012). Medium dependent dual Turn-ON/Turn-OFF fluorescence system for heavy metal ions sensing. *Journal of Physical Chemistry*, C. 116 (2), 1987–1994 <http://pubs.acs.org/doi/pdf/10.1021/jp210687v>

Gemma Aragay, Helena Montón, Josefina Pons, Mercè Font-Bardía, Arben Merkoçi (2012). Rapid and high sensitive detection of mercury ions using a fluorescence based paper test strip with a N-alkylaminopyrazole ligand as receptor. *Journal of Materials Chemistry*. 22, 5978-5983 <http://pubs.rsc.org/en/content/articlepdf/2012/jm/c2jm15717a>

Susana Campuzano, Jahir Orozco, Daniel Kagan, Maria Guix, Wei Gao, Sirilak Sattayasamitsathit, Jonathan C. Claussen, Arben Merkoçi and Joseph Wang (2012). Bacterial Isolation by Lectin-Modified Microengines. *Nano Letters*. 12 (1), 396–401 <http://pubs.acs.org/doi/pdf/10.1021/nl203717q>

Mayorga-Martinez, Carmen C.; Guix, Maria; Madrid, Rossana E.; Merkoçi, Arben (2012). Bimetallic nanowires as electrocatalysts for nonenzymatic real-time impedancimetric detection of glucose. *CHEMICAL COMMUNICATIONS*. 48, 11, 1686-1688 <http://pubs.rsc.org/en/content/articlepdf/2011/cc/c2cc16601a>

Eden Morales-Narváez, Briza Pérez-López, Luis Baptista Pires, Arben Merkoçi (2012). Simple Forster resonance energy transfer evidence for the ultrahigh quantum dot quenching efficiency by graphene oxide compared to other carbon structures. *Carbon*. 50, 8, 2987-2993 <http://www.sciencedirect.com/science/article/pii/S0008622312002187?v=s5>

Merkoçi, Arben; Kutter, Jorg P. (2012). Analytical miniaturization and nanotechnologies. *LAB ON A CHIP*. 12, 11, 1915-1916

Guix, Maria; Orozco, Jahir; Garcia, Miguel; Gao, Wei; Sattayasamitsathit, Sirilak; Merkoçi, Arben; Escarpa, Alberto; Wang, Joseph (2012). Superhydrophobic Alkanethiol-Coated Microsubmarines for Effective Removal of Oil. *ACS NANO*. 6, 5, 4445-4451

Morales-Narvaez, Eden; Merkoçi, Arben (2012). Graphene Oxide as an Optical Biosensing Platform. *ADVANCED MATERIALS*. 24, 25, 3298-3308

Lopez-Marzo, Adaris; Pons, Josefina; Merkoçi, Arben (2012). Controlled formation of nanostructured CaCO<sub>3</sub>-PEI microparticles with high biofunctionalizing capacity. *JOURNAL OF MATERIALS CHEMISTRY*. 22, 30, 15326-15335

Morales-Narvaez, Eden; Monton, Helena; Fomicheva, Anna; Merkoçi, Arben (2012). Signal Enhancement in Antibody Microarrays Using Quantum Dots Nanocrystals: Application to Potential Alzheimer's Disease Biomarker Screening. *ANALYTICAL CHEMISTRY*. 84, 15, 6821-6827

Maltez-da Costa, Marisa; de la Escosura-Muniz, Alfredo; Nogues, Carme; Barrios, Leonard; Ibanez, Elena; Merkoçi, Arben (2012). Simple Monitoring of Cancer Cells Using Nanoparticles. *NANO LETTERS*. 12, 8, 4164-4171

de la Escosura-Muniz, Alfredo; Merkoçi, Arben (2012). Nanochannels Preparation and Application in Biosensing. ACS NANO. 6, 9, 7556-7583

Medina-Sanchez, Mariana; Miserere, Sandrine; Marin, Sergio; Aragay, Gemma; Merkoci, Arben (2012). On-chip electrochemical detection of CdS quantum dots using normal and multiple recycling flow through modes. LAB ON A CHIP. 12, 11, 2000-2005

Maltez-da Costa, Marisa; de la Escosura-Muniz, Alfredo; Nogues, Carme; Barrios, Leonard; Ibanez, Elena; Merkoci, Arben (2012). Detection of Circulating Cancer Cells Using Electrocatalytic Gold Nanoparticles. SMALL. 8, 23, 3605-3612

Gemma Aragay, Arben Merkoçi (2012). Nanomaterials application in electrochemical detection of heavy metals. ELECTROCHIMICA ACTA. 84, , 49-61

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<http://www.nanobiosensors.org/group-leader/>