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Date of Birth: 22nd, November, 1976

Nationality : Spanish

Sex: Female

Address of Home Institution:

Istituto di Fotonica e Nanotecnologie (IFN) - CNR
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STUDIES BIOGRAPHIC SKETCH

1995- 2000 Five years degree in Physics, Universidad Autónoma de Madrid (Spain)

2000- 2005 Physics Doctorate, Universidad Autónoma de Madrid (Spain)

CAREER BREAKS

2002 Maternity leave (4 months leave).

2007 Maternity leave (5 months leave).

2009 Maternity leave (7 months leave).

2012 Maternity leave (7 months leave).

FELLOWSHIPS & CONTRACTS

November 2000-April 2001: Web pages development at Universidad Autónoma de Madrid (Spain).

September 2002- January 2004: Fellowships from SAES GETTER Society (Milan, Italy) for the Characterization of novel crystalline materials with non-linear optics applications at Physics Department, Politecnico di Milano (Italy).

January 2004-December 2005: Contract with the Photonics and Nanotechnologies CNR Institute (IFN) at Milan (Italy): "Direct writing of waveguides and photonic crystals structures with femtosecond pulses".

January 2006: Researcher contract with the Photonics and Nanotechnologies CNR Institute (IFN-CNR) at Milan (Italy).

February 2010: Permanent Researcher at the Photonics and Nanotechnologies CNR Institute (IFN-CNR) at Milan (Italy).

RESEARCH, TEACHING & OTHER EXPERIENCE

RESEARCH

Present Field: Femtosecond laser micromachining, Lab-on-a-Chip, Integrated Optics, Direct laser writing, Hybrid femtosecond laser manufacturing.

Other Fields: Materials Science, Crystal Growth, Solid State Physics

Research Experience:

Theoretical study, development, and fabrication of glass microfluidic chips for gas manipulation and interaction with strong laser fields.

Development of Two-photon polymerization optical structures for implantable devices.

Development of Two-photon polymerization 3D structures to study migration and mechanical properties of cancer cells.

Development of integrated lab on a chip sensors fabricated by femtosecond laser micromachining and multiphoton polymerization.

Development and Characterization of plastic lab-on-chip for point of care testing.

Development and fabrication, by femtosecond laser processing, of glass microfluidic chips for the manipulation of single cells.

Development of Integrated On-chip Detection systems for Microfluidic experiments, by the integration of optical waveguides and diffractive optical elements (fabricated by the femtosecond laser) in polymeric microfluidic chips.

Integration of waveguide into microfluidic Capillary electrophoresis glass-chips. Excitation and detection of bio-labelled molecules like DNA fragments.

Modification of glass material by Femtosecond laser irradiation. Waveguide and photonic devices fabrication by the same technique.

Synthesis, growth and study of new materials for optoelectronic applications:

Synthesis and single crystal growth of the fluoride crystals LiCAF and LISAF (undoped and doped with Cr) by the CZ technique. Synthesis and single Crystal Growth of $\text{YAl}_3(\text{BO}_3)_4$ (YAB) borates crystals, undoped and doped with different rare earths: Dy and Er, by the spontaneous nucleation technique.

Sample preparation (cutting, orientation, by LAUE technique, and polishing (mechanic-chemical)). X-Ray analysis (powder diffraction, total fluorescence, topography), WDX, optical characterization of samples, DTA analysis.

RESEARCH visiting

- 4-5 May 2023: In-house beamtime at TIMEX beamline of Free electron Laser facility FERMI for the “characterization of eXtreme UV photonic integrated circuits”.
- December 2022: In-house beamtime at TIMEX beamline of Free electron Laser facility FERMI for the “characterization of eXtreme UV photonic integrated circuits”.
- 9-15 May 2022: Elettra Sincrotrone Trieste, beamtime 20220564 "Characterization of the longitudinal gas density profile in a microfluidic gas cell".
- September 2002- January 2004: In the framework of the PhD, fellowship from SAES GETTER Society (Milan, Italy) for the Optical characterization of new crystalline materials at the Politecnico di Milano (Italy).

Projects

- IFN-CNR **unit coordinator** in the European FET-H2020 project “X-PIC: eXtreme ultraviolet to soft-X-ray Photonic Integrated Circuits” (H2020-FETOPEN-2021-964588), Duration: 2021-2025. Coordinator: Prof. Salvatore Stagira.
- IFN-CNR **unit coordinator** in the PON Project “TITAN - Nanotecnologie per l’immunoterapia dei tumori”, (PON ARS01_00906) funded by FESR in the framework of PON “Ricerca e Innovazione” 2014 - 2020 - Azione II - OS 1.b). Duration: 30+6 months: 2021-2024. Coordinator: Prof. Giuseppe Gigli.
- Researcher in the European FET-H2020 project “An in vivo bioengineered chip as a smart intravital multiphoton imaging window for new validation protocols of biomaterials” (H2020-FETOPEN-2021-964481), Duration 2021-2025; Coordinator: Prof. Giuseppe Chirico.
- Researcher in the European ICT-H2020 project “TERABOARD - High bandwidth density and scalable optically interconnected Terabit/s Board” (H2020-ICT-2015 n°688510), Duration: 2015-2019. Coordinator: Prof. Marco Romagnoli.
- Researcher in the Italian Project (MIUR-Fabbrica del Futuro-Prototype) “IC+: Imaging Citometry in Plastic Ultra-mobile Systems”, duration: 6 months at 2016, Coordinator Prof. R. Osellame.
- **Coordinator** of International Project “FEASIBLE” in the framework of the Joint European call CONCERT JAPAN (Rif. CONCERT 2014-013), duration: 2014-2016.
- Researcher in the Italian Project (MIUR-Fabbrica del Futuro) “PLUS- Plastic Lab-on-chips for the optical manipulation of Single-cells”, duration: 2012-2015, Coordinator Prof. R. Osellame.
- Research **Unit supervisor** in the Cariplo project Cariplo "Optofluidic chips for the study of cancer cell mechanical properties and invasive capacities"(Rif. 2011-0370), duration: 2011-2013. Coordinator Prof. I. Cristiani.

- Researcher in the project "MINILAB" (ID MAN-18), Regione Lombardia Call, duration: 2010-2012. Coordinator Prof. R. Osellame.
- Researcher in a contract project with Saint Gobain, duration 2010-2012.
- Researcher in the European STREP project "microFLUID – microFabrication of polymeric Lab-on-a-chip by Ultrafast lasers with Integrated optical Detection" (ICT-2007- 224205) duration: 2008-2010. Coordinator Prof. R. Osellame.
- Researcher in the European STREP project "Hibiscus - Hybrid Integrated Biophotonic Sensors Created by Ultrafast laser Systems" (034562), DURATION: 2006-2009. Coordinator: Prof. G. Cerullo.

TEACHING

November 2022-present: Supervising PhD student Alia Ashraf.

May 2021- present Supervising PhD student Pasquale Barbato.

2015 – 2018 Co-Supervising PhD student Diogo Lopes

2015 – Lecture during the workshop "La fotonica per le scuole"

2013 – present Teaching assistant for several courses and laboratories of physics at Politecnico di Milano

2006 – present Supervising Fifth year master students (Electronic Engineering and Physics Engineering): Benedetta Bolis, Dario William Lodi, Alessandro Paletti, Pasquale Barbato, Hazal Sezer, Alice Roversi, Giacomo Bocci, Riccardo Gotti, Diego Orsignola, Andrea de Rosa, Daniela Nolli, Veronica Crimi.

2009 – 2016. Supervising several Third year undergraduate students (Physics Engineering).

OTHERS

PhD thesis external Reviewer

- External Reviewer of PhD thesis: "Femtosecond laser based smart procedures for the fabrication of polymeric lab on a chip devices", Vadakkum Vadukkal Udith Krishnan, Università degli Studi di Bari "Aldo Moro", Bari (Italy) 2020.
- External Reviewer of PhD thesis: "Beam shaping and applications: tailoring Bessel beams for laser micromachining and for particle accelerations in plasma wakefield", Sanjeev Kumar, Department of Science and High Technology, University of Insubria, Como (Italy) 2017.
- External Reviewer of PhD thesis and evaluation committee member: "Modelling and production of surface and sub-surface photonics elements by ultrafast-laser structuring of dielectrics", J. del Hoyo Muñoz, Universidad Complutense de Madrid (Spain) 2016.

Conferences Committee - Organizer

- Member of the Scientific Subcommittee (Integrated Optics Topic) for the X Iberoamerican Optics Meeting (RIO-OPTILAS Conference), 2019.
https://www.riao.org.mx/optilas_2019/committees.php
- LPM 2015, Fukuoka (Japan) Conference Special Session Co-Organizer “Hybrid femtosecond laser manufacturing”

INVITED TALKS

1. **Plenary lecture** at the 14th International Conference *Processes in Isotopes and Molecules* (PIM 2023) Cluj-Napoca in 19 – 22 September 2023, “femtosecond Laser Micromachining for Lab-on-a-Chip Applications”.
2. **R. Martínez Vázquez**, “Femtosecond laser micromachining of microfluidic devices for intense laser applications: technological limits and prospects”, Invited talk at the First Workshop of the X-PIC Project, 23rd March 2023, Milan, Italy.
3. **R. Martínez Vázquez**, “Femtosecond laser micromachining applied to the fabrication of Lab-on-a-Chip devices”, Institute of Optics, CSIC, Madrid (Spain) 3-Nov-2016, hosted by Prof. J. Solis.
4. **R. Martínez Vázquez**, Francesca Bragheri, Petra Paie, Roberto Osellame “Femtosecond laser micromachining for fabricating optofluidic devices” FIMPART 2015, Hyderabad, India.
5. **R. Martínez Vázquez** “Fabbricare lab-on-a-chip con il laser a femtosecondi”, Le Frontiere della luce: Viaggio alla scoperta della luce estrema, Aula Convegni CNR, Roma (Italy) 8-Oct-2015.
6. **R. Martínez Vázquez**, Femtosecond laser micromachining of optofluidic devices (for single cell analysis)” RIKEN, Wako (Japan) 27-Nov-2015, hosted by Prof. K. Sugioka.

Editorial Boards

- Member of the Micromachines editorial board.
<https://www.mdpi.com/journal/micromachines/editors?search=Rebeca>
- Associate editor of Frontiers in Photonics (since 2022)
- Guest Editor of Applied Sciences Journal Special Issue “Ultrashort Pulses: Generation and Applications”, 2020-2021.
https://www.mdpi.com/journal/applsci/special_issues/Ultrashort_Pulses
- Guest Editor of Micromachines Journal Special Issue “New Trends and Applications in Femtosecond Laser Micromachining”, 2020-2021.
https://www.mdpi.com/journal/micromachines/special_issues/Laser_Micromachining
- Guest Editor of Micromachines Special Issue “Optical Manipulation of Cells: Strategies and Devices”, 2018.
http://www.mdpi.com/journal/micromachines/special_issues/optical_manipulation_cells

- Guest Editor of Micromachines Special Issue “Ultrafast laser Fabrication for Lab-on-a-Chip”, 2016. http://www.mdpi.com/si/micromachines/femtosecond_laser

PEER Review (Journals and Projects)

- Reviewer for several International Journals: OSA Continuum, Lab on a Chip, Optical Materials, Journal of Optics and laser technology, Applied Surface Science, Journal of Laser Micro/Nanoengineering, Photonics Technology Letters, Micromachines, Photonics Technology Letters.
- Successfully completed the OSA Reviewer Certification Course.
- Reviewer for the French Funding agency (June 2023): INSERM, Chargé de mission appels à projets Plan Cancer et Stratégie Décennale Cancer; <https://eva3-accueil.inserm.fr/sites/eva/appels-a-projets/pca/Pages/pcsi.aspx>
- Reviewer for the German Funding agency: Deutsche Forschungsgemeinschaft (DFG) (since 2019). (www.dfg.de).
- Reviewer for Italian projects: SIR (2015) and “Programma per Giovani ricercatori Rita Levi Montalcini” (2015).

RESEARCH OUTPUTS

PATENTS (1)

Submission of Patent: ***Implantable microstructured device for optical imaging - Piattaforma impiantabile per l'imaging in vivo***: 102022000009587, Cerullo, G.; Raimondi, M. T.; Conci, C.; Nardini, A.; Osellame, R.; Chirico, G.; Bouzin, M.; Marini, M.; Sironi, L.; Collini, M.; Martínez Vázquez, R.; Farsari, M.; Kambouraki, E.

BOOK CHAPTERS (4)

- In the second edition of “Three-Dimensional Microfabrication Using Two-Photon Polymerization”, T. Baldacchini editor (Elsevier, 2020) ISBN 978-0-12-817827-0
- In “Factories of the Future”, Tolio T., Copani G., Terkaj W., eds. (Springer, Cham, 2019) ISBN 978-3-319-94357-2.
- In “Three-Dimensional Microfabrication Using Two-Photon Polymerization”, T. Baldacchini editor (Elsevier, 2015) ISBN 978-03-23353212
- In “Femtosecond laser micromachining: photonic and microfluidic devices in transparent materials, R. Osellame, G. Cerullo, R. Ramponi, eds. (Springer, 2012). ISBN 978-3-642-23365-4.

PEER-REVIEWED PUBLICATIONS (58, Chronological order)

1. E.P. Kokanyan, R.A. Tamazyan, **R. Martínez Vázquez**, E. Diéguez. "Peculiarities of synthesis and flux growth of neodymium yttrium aluminium borate crystals" *Materials Research Bulletin* 30 (2001) 2199-2205.
2. **R. Martínez Vázquez**, M.T. Santos, F.J. López, E.D. Bravo, E. Diéguez. "Influence of neutral environment in the growth of Cr-doped LiCAF/LiSAF crystals: X-ray Powder Diffraction and EPR Analysis" *J. Crys. Growth* 237-239 (2002) 894-898.
3. **R. Martínez Vázquez**, M.A. Caballero, M. González Mañas, E.P. Kokanyan, C.M. Ruiz, E. Diéguez. "Morphologic characterization of Dy-xY_{1-x}Al₃(BO₃)₄ single crystals grown by flux and vapour phase" *J. Crys. Growth* 237-239 (2002) 668-671.
4. **R. Martínez Vázquez**, R. Osellame, M. Marangoni, R. Ramponi, E. Diéguez, M. Ferrari and M. Matarrelli. "Optical properties of Dy³⁺ doped yttrium aluminum borate" *J. Phys: Cond. Matter* 16,3 (2004) 465-471.
5. **R. Martínez Vázquez**, R. Osellame, M. Marangoni, R. Ramponi, E. Diéguez,. "Er³⁺ doped YAl₃(BO₃)₄ single crystals: determination of the refractive indices" *Optical Materials*, 26, 3 (2004) 231-233.
6. **R. Martínez Vázquez**, Jolanta Prywer, E. Dieguez. "Simulations of Doped YAl₃(BO₃)₄ Crystals Shape" *J of Crystal Growth*, 275, 1-2 (2005) e909-e913.
7. **R. Martínez Vázquez**, R. Osellame, G. Cerullo, R. Ramponi, N. Chiodini, A. Paleari, G. Spinolo. "Fabrication of guiding structures in nanostructured Tin-silicate glass ceramic by a focused femtosecond laser" *J. Noncrystalline Solids*, 351 (2005) 1855-1859.
8. R. Osellame, V. Maselli, N. Chiodo, D. Polli, **R. Martínez Vázquez**, R. Ramponi, G. Cerullo. "Fabrication of 3D photonic devices at 1.55 μ m wavelength by a femtosecond Ti:Sapphire oscillator" *Electronics Letters*, 41, 6 (2005) 315-317.
9. R. Osellame, V. Maselli, **R. Martínez Vázquez**, R. Ramponi, G. Cerullo. "Integration of optical waveguides and microfluidics channels both fabricated by femtosecond laser irradiation" *Applied Physics Letters*, 90 (2007) 231118(1) - 231118(3).
10. R. Osellame, **R. Martínez Vázquez**, G. Cerullo, O. Svelto, V. Russo, A. Li Bassi, C.E. Bottani, C. Spinella "Interaction between femtosecond laser pulses and CdS_xSe_{1-x} quantum dots in glasses" *Physical Review B*, 76 (2007) 045340(1) - 045340 (7).

11. **R. Martínez Vázquez**, R. Osellame, G. Cerullo, R. Ramponi, O. Svelto. "Fabrication of photonic devices in nanostructured glasses by femtosecond laser pulses". *Optics Express*, 15, 20 (2007) 12628-12635.
12. Diego Ghezzi, **Rebeca Martínez Vázquez**, Roberto Osellame, Flavia Valtorta, Alessandra Pedrocchi, Roberta Ramponi, Giancarlo Ferrigno, Giulio Cerullo. "Femtosecond laser microfabrication of an integrated device for optical release and sensing of bioactive compounds" *Sensors*, 8, 6595-6604 (2008); DOI: 10.3390/s8106595.
13. C. Dongre, R. Dekker, H.J.W.M. Hoekstra, M. Pollnau, **R. Martínez Vázquez**, R. Osellame, G. Cerullo, R. Ramponi, R. van Weeghel, G.A.J. Besselink, and H.H. van den Vlekert. "Fluorescence Monitoring of Microchip Capillary Electrophoresis Separation with Monolithically Integrated Waveguides" *Optics letters*, 33, 21 (2008) 2503-2505; DOI: 10.1364/OL.33.002503.
14. **Rebeca Martínez Vázquez**, Roberto Osellame, Daniela Nolli, Chaitanya Dongre, Hans H. van den Vlekert, Roberta Ramponi, Markus Pollnau and Giulio Cerullo. "Integration of femtosecond laser written optical waveguides in a lab-on-chip". *Lab on chip*, 9 (2009); DOI: 10.1007/s00216-008-2399-8. ***Awarded with Journal Inside Front Cover.***
15. **Rebeca Martínez Vázquez**, Roberto Osellame, Marina Cretich, Marcella Chiari, Chaitanya Dongre, Hugo J. W. M. Hoekstra, Markus Pollnau, Hans van den Vlekert, Roberta Ramponi and Giulio Cerullo. "Optical sensing in microfluidic lab-on-a-chip by femtosecond-laser-written waveguides". *Analytical and Bioanalytical Chemistry*, 393, 4 (2009) 1209-1216.
16. Roberto Osellame, **Rebeca Martínez Vázquez**, Roberta Ramponi, Giulio Cerullo. "Integrating optical sensing into lab-on-a-chip systems". *SPIE Newsroom* (2009); DOI: 10.1117/2.1200905.1597
17. Chaitanya Dongre, Jasper van Weerd, Geert A. J. Besselink, Rob van Weeghel, **Rebeca Martínez Vázquez**, Roberto Osellame, Giulio Cerullo, Marina Cretich, Marcella Chiari, Hugo J. W. M. Hoekstra, Markus Pollnau. "High-resolution electrophoretic separation and integrated-waveguide excitation of fluorescent DNA molecules in a lab on a chip". *Electrophoresis*, 31 (2010) 2584–2588.
18. T. Toney Fernandez, S. M. Eaton, G. Della Valle, **R. Martínez Vázquez**, M. Irannejad, G. Jose, A. Jha, G. Cerullo, R. Osellame and P. Laporta. "Femtosecond laser written optical waveguide amplifier in tellurite glass" *Optics Express*, 18, 19 (2010) 20289-20297. DOI: 10.1364/OE.18.020289
19. F. Venturini, W. Navarrini, G. Resnati, P. Metrangolo, **R. Martínez Vázquez**, R. Osellame and Giulio Cerullo. "Selective Iterative Etching of Fused Silica with Gaseous Hydrofluoric Acid" *J. Phys. Chem. C*, 114, 43 (2010) 18712–18716. DOI: 10.1021/jp107055s
20. C. Dongre, J. van Weerd, G.A.J. Besselink, R. Osellame, **R. Martínez Vázquez**, G. Cerullo, R. van Weeghel, H.H. van den Vlekert, H.J.W.M. Hoekstra, and M. Pollnau, "Modulation-frequency

- encoded multi-color fluorescent DNA analysis in an optofluidic chip", *Lab on a Chip*, vol. 11, no. 4, (2011) 679-683.
21. **R. Martínez Vázquez**, S. M. Eaton, R. Ramponi, G. Cerullo and R. Osellame, "Fabrication of binary Fresnel lenses in PMMA by femtosecond laser surface ablation", *Optics Express*, Vol. 19 Issue 12, (2011) 11597-11604.
 22. Luke B. Fletcher, Jonathan J. Witcher, Neil Troy, Signo T. Reis, Richard K. Brow, **Rebeca Martinez Vazquez**, Roberto Osellame, and Denise M. Krol, "Femtosecond laser writing of waveguides in zinc phosphate glasses", *Optical Materials Express* Vol. 1, Iss. 5, (2011) 845–855.
 23. Shane M. Eaton, Carmela De Marco, **Rebeca Martinez-Vazquez**, Roberta Ramponi, Stefano Turri, Giulio Cerullo, and Roberto Osellame, "Femtosecond laser microstructuring for polymeric lab-on-chips", *J. Biophotonics* 5, 687-702 (2012) / DOI 10.1002/jbio.201200048. **Awarded with Journal Front Cover**
 24. F. Bragheri, P. Minzioni, **R. Martinez Vazquez**, N. Bellini, P. Paie`, C. Mondello, R. Ramponi, I. Cristiani and R. Osellame, "Optofluidic integrated cell sorter fabricated by femtosecond lasers" *Lab Chip*, 2012, 12, 3779–3784.
 25. Francesco Venturini, Maurizio Sansotera, **Rebeca Martinez Vazquez**, Roberto Osellame, Giulio Cerullo, Walter Navarrini, "Micromanufacturing in fused silica via femtosecond laser irradiation followed by gas-phase chemical etching" *Micromachines* 2012, 3(4), 604-614; doi:10.3390/mi3040604
 26. Carmela De Marco, Shane M. Eaton , **Rebeca Martinez-Vazquez**, Stefano Rampini, Giulio Cerullo, Marinella Levi, Stefano Turri, Roberto Osellame, "Solvent vapor treatment controls surface wettability in PMMA femtosecond-laser-ablated microchannels" *Microfluid Nanofluid* 2012, published online; DOI 10.1007/s10404-012-1035-2
 27. Francesco Venturini, **Rebeca Martinez Vazquez**, Roberto Osellame, Giulio Cerullo Maurizio Sansotera, Walter Navarrini, "Maskless, fast and highly selective etching of fused silica with gaseous fluorine and gaseous hydrogen fluoride", *Journal of Micromechanics and Microengineering* 24 (2), 025004 (2014). DOI: 10.1088/0960-1317/24/2/025004.
 28. Surya S. K. Guduru , Francesco Scotognella , Luigino Criante , **Rebeca Martinez Vazquez** , Roberta Ramponi , Krishna Chaitanya Vishnubhatla, "Fresnel lenses fabricated by femtosecond laser micromachining on polymer one-dimensional photonic crystal", *Opt. Eng.* 53(7), 071813 (Jan 27, 2014).
 29. Petra Paiè, Francesca Bragheri, **Rebeca Martinez Vazquez** and Roberto Osellame, "Straightforward 3D hydrodynamic focusing in femtosecond laser fabricated microfluidic channels" *Lab on a Chip* 2014, 14, 1826-1833; DOI: 10.1039/c4lc00133h **Awarded with Journal Front Cover.**

30. Jesús del Hoyo, **Rebeca Martínez Vazquez**, Belén Sotillo, Toney Teddy Fernandez, Jan Siegel, Paloma Fernández, Roberto Osellame, and Javier Solis “Control of waveguide properties by tuning femtosecond laser induced compositional changes” *App. Physics Letters* 105, 131101 (2014).
31. Annalisa Volpe, Francesca Di Niso, Caterina Gaudioso, Andrea de Rosa, **Rebeca Martínez Vázquez**, Antonio Ancona, Pietro Mario Lugarà and Roberto Osellame “Welding of PMMA by a femtosecond fiber laser” *Optics Express*, 2015, 23, 4, 4114-4124.
32. T. Yang, P. Paiè, G. Nava, F. Bragheri, **R. Martínez Vázquez**, P. Minzioni, M. Vegliione, M. Di Tano, C. Mondello, R. Osellame and I. Cristiani “An integrated optofluidic device for single-cell sorting driven by mechanical properties” *Lab Chip*, 2015, 15, 1262; doi: 10.1039/c4lc01496k.
33. **R. Martínez Vázquez**, G. Nava, M. Vegliione, T. Yang, F. Bragheri, P. Minzioni, E. Bianchi, M. Di Tano, I. Chiodi, R. Osellame, C. Mondello and I. Cristiani “An optofluidic constriction chip for monitoring metastatic potential and drug response of cancer cells” *Integr. Biol.*, 2015, 7, 477 – 484; doi: 10.1039/C5IB00023H
34. T. Fernandez, B. Sotillo, J. del Hoyo, J. A Valles, **R. Martínez Vazquez**, P. Fernandez, J. Solis “Dual regimes of ion migration in high repetition rate femtosecond laser inscribed waveguides” *IEEE PHOTONICS TECHNOLOGY LETTERS*, 2015, vol. 27, 10, 1068-1071.
35. Tie Yang, Giovanni Nava, Paolo Minzioni, Manuela Vegliione, Francesca Bragheri, Francesca Demetra Lelii, **Rebeca Martínez Vazquez**, Roberto Osellame and Ilaria Cristiani, “Investigation of temperature effect on cell mechanics by optofluidic microchips” *Biomedical Optics Express*, 2015, 6, 236345.
36. Francesca Bragheri, Petra Paiè, **Rebeca Martínez Vázquez**, Roberto Osellame, “An optofluidic chip for single-cell sorting based on mechanical properties” *SPIE Newsroom* (2015), DOI: 10.1117/2.1201510.006179.
37. Surya S. K. Guduru, Francesco Scotognella, Alessandro Chiasera, Valligatla Sreeramulu, Luigino Criante, Krishna Chaitanya Vishnubhatla, Maurizio Ferrari, Roberta Ramponi, Guglielmo Lanzani, **Rebeca Martínez Vázquez**, “Highly integrated lab-on-a-chip for fluorescence detection,” *Opt. Eng.* 55(9), 097102 (2016), doi: 10.1117/1.OE.55.9.097102.
38. **Rebeca Martínez Vázquez**, Gianluca Trotta, Annalisa Volpe, Giuseppe Bernava, Vito Basile, Melania Paturzo, Pietro Ferraro, Antonio Ancona, Irene Fassi and Roberto Osellame, “Rapid Prototyping of Plastic Lab-on-a-Chip by Femtosecond Laser Micromachining and Removable Insert Microinjection Molding” *Micromachines* 2017, 8(11), 328; doi:10.3390/mi8110328
39. Felix Sima, Koji Sugioka, **Rebeca Martínez Vázquez**, Roberto Osellame, Lorand Kelemen, Pal Ormos, “Three-dimensional femtosecond laser processing for lab-on-a-chip applications” *Nanophotonics* 7(3), 613-634 (2018), 10.1515/nanoph-2017-0097.

40. Petra Paiè, Tommaso Zandrini, **Rebeca Martínez Vázquez**, Roberto Osellame and Francesca Bragheri, "Particle manipulation by Optical Forces in Microfluidic devices" *Micromachines* 9, 200 (2018), 10.3390/mi9050200.
 41. Gianluca Trotta, **Rebeca Martínez Vázquez**, Annalisa Volpe, Francesco Modica, Antonio Ancona, Irene Fassi and Roberto Osellame, "Disposable Optical Stretcher Fabricated by Microinjection Moulding" *Micromachines* 9, 388 (2018), 10.3390/mi9080388.
 42. Petra Paiè, **Rebeca Martínez Vázquez**, Roberto Osellame, Francesca Bragheri, Andrea Bassi, "Microfluidic Based Optical Microscopes on Chip" *Cytometry Part A* 93,10 (2018) 10.1002/cyto.a.23589.
 43. Mara Galli, Vincent Wanie, Diogo Pereira Lopes, Erik P Månsson, Andrea Trabattoni, Lorenzo Colaizzi, Krishna Saraswathula, Andrea Cartella, Fabio Frassetto, Luca Poletto, François Légaré, Salvatore Stagira, Mauro Nisoli, **Rebeca Martínez Vázquez**, Roberto Osellame, Francesca Calegari "Generation of deep ultraviolet sub-2 fs pulses" *Optics Letters* 44, 1308-1311 (2019).
 44. Lóránd Kelemen, Eugenia Lepera, Bence Horváth, Pál Ormos, Roberto Osellame, **Rebeca Martínez Vázquez** "Direct writing of optical microresonators in lab-on-chip for label-free biosensing" *Lab Chip*, 2019,19,1985. * **Listed as one of Lab on a Chip's highest citing papers in 2021.**
 45. Carlotta Ficorella, **Rebeca Martínez Vázquez**, Paul Heine, Eugenia Lepera, Jing Cao, Enrico Warnt, Roberto Osellame, Josef A. Käs "Normal epithelial and triple-negative breast cancer cells show the same invasion potential in rigid spatial confinement" *New J. Phys.* 2019, 21, 083016. <https://doi.org/10.1088/1367-2630/ab3572>.
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