

# Curriculum Vitae

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## PERSONAL INFORMATION

### Lucas Vázquez Besteiro

Principal Investigator  
CINBIO - Biomedical Research Center  
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## POSITIONS

### CINBIO Biomedical Research Centre - University of Vigo, Vigo, Pontevedra, Spain

- Principal Investigator Sep 2020 – Present
  - Research in computational nanophotonics, exploring fundamental properties of plasmonic nanostructures and their application in different fields.

### Institute of Fundamental and Frontier Sciences - University of Electronic Science and Technology of China, Chengdu, Sichuan, China

### Institut National de la Recherche Scientifique - Énergie, Matériaux et Télécommunications, Varennes, Québec, Montreal

- IFFS postdoctoral fellow, jointly appointed Sep 2017 – Aug 2020
  - Fundamental research in material science, nanophotonics and plasmonics, with a strong emphasis on direct collaboration with experimental groups working in photovoltaics, photocatalysis, nanoheating, EELS characterization and nanothermometry, among other topics.
  - Advisers: Prof. Zhiming Wang (UESTC) and Prof. Federico Rosei (INRS)

### Department of Physics and Astronomy - Ohio University, Athens, Ohio, USA

- Postdoctoral researcher Aug 2014 – Jul 2017
  - Theoretical research in the fields of nanophotonics and plasmonics, using computational resources to model systems of fundamental and technological interest. I was involved in a variety of projects studying phenomena such as plasmonic hot electron generation, chiral signal enhancement, plasmon dynamics and nanoheating. The position included some teaching opportunities.
  - Adviser: Prof. Alexander O. Govorov

## EDUCATION

### Universidad de Santiago de Compostela, Santiago de Compostela, Spain

- PhD in Material Science Oct 2010 – Jul 2014
  - Thesis: Influence of Dimensionality on Structural and Electronic Properties of Semiconductor Nanomaterials: Quantum Dots, Nanowires and Nanotubes
  - Description: A study, through *ab initio* calculations, on III-V semiconductor materials, focusing on the effects of quantum confinement in nanostructures with different dimensionality
  - Advisers: Prof. Manuel M.G. Alemany and Prof. Luis J. Gallego
- MS in Material Science Oct 2008 – Jul 2010
  - Thesis: Efficient *n*-type doping of semiconductor nanocrystals with crystalline nucleus of zinc-blende structure
  - Description: Postgraduate degree oriented towards doctoral studies
  - Advisers: Prof. Manuel M.G. Alemany and Prof. Luis J. Gallego
- Extended BS in Physics Oct 2002 – Sep 2008
  - Description: Generalist degree on Physics (*Licenciatura*), with the last two years centered upon theoretical and particle Physics

### Universidad Nacional de Educación a Distancia, Madrid, Spain

- MS in Physics of Complex Systems Oct 2012 – Sep 2015
  - Thesis: Simple Recommendation Model as a Mechanism for Idea Transmission
  - Description: Posgraduate distance education degree with a focus on social and neural networks.
  - Adviser: Prof. Javier de la Rubia

<b>HONORS &amp; AWARDS</b>	<b>Outstanding Postdoctoral Fellow 2018</b> University of Electronic Science and Technology of China, Chengdu, Sichuan, China	2018
	<b>PhD Thesis awarded <i>Cum Laude</i> mention</b> University of Santiago de Compostela, Spain	2014
<b>FUNDING</b>	<b>Proyectos estratégicos orientados transición ecológica y transición digital 2021:</b> 220 000 EUR Spanish Ministry of Science and Innovation, Spain	2023– 2025
	<b>The Research Fund for International Excellent Young Scientists:</b> 400 000 CNY National Natural Science Foundation of China, China	2022
	<b>Proyectos I+D+i «Retos Investigación»:</b> 115 000 EUR Spanish Ministry of Science and Innovation, Spain	2021– 2024
	<b>The Research Fund for International Young Scientists:</b> 200 000 CNY National Natural Science Foundation of China, China	2020
	<b>IFFS-UESTC Postdoctoral Fellowship</b> University of Electronic Science and Technology of China, Chengdu, Sichuan, China	2017 – 2020
	<b>Grant Juan de la Cierva - Incorporación 2018</b> - Declined Ministerio de Ciencia, Innovación y Universidades, Spanish State Research Agency, Spain	2019
	<b>12nd Edition of Special Grants. Amount:</b> 180 000 + 36 000 CNY Postdoctoral Science Foundation, China	2019
	<b>62nd Edition of General Grants. Amount:</b> 50 000 + 10 000 CNY Postdoctoral Science Foundation, China	2017
<b>PUBLICATIONS - BOOK CHAPTERS</b>	[1] <u>L.V. Besteiro</u> , X.-T. Kong, Z.M. Wang, A.O. Govorov. <b>Theory of Plasmonic Excitations: Fundamentals and Applications in Photocatalysis.</b> Eds. P.H.C. Camargo, E. Cortés. <b>Plasmonic Catalysis: From Fundamentals to Applications.</b> Wiley (2021)	
<b>PUBLICATIONS - EDITORIALS</b>	[1] <u>L.V. Besteiro</u> <sup>*</sup> , E. Cortés <sup>*</sup> , S. Ishii <sup>*</sup> , P. Narang <sup>*</sup> , R.F. Oulton <sup>*</sup> . <b>Hot Electron Physics and Applications.</b> <i>Journal of Applied Physics</i> <b>129</b> , 150401 (2021) <sup>*</sup> Corresponding authors	
<b>PUBLICATIONS - PAPERS</b>	[63] Q. Zhang, A. Mirzaei, Y. Wang, G. Song, C. Wang, <u>L.V. Besteiro</u> <sup>*</sup> , A.O. Govorov <sup>*</sup> , M. Chaker, D. Ma <sup>*</sup> . <b>Extracting hot holes from plasmonic semiconductors for photocatalysis.</b> <i>Applied Catalysis B: Environmental</i> <b>317</b> , 121792 (2022) <sup>*</sup> Corresponding authors	
	[62] P. Li, P. Yu, J. Sun, Z. Jing, J. Wu, <u>L.V. Besteiro</u> , R. Caputo, A. Neogi, H. Xu, Z.M. Wang. <b>Directional radiation enhancement of nanowire quantum dots based on line-array plasmonic antenna coupling.</b> <i>Photonics Research</i> <b>10</b> , 2178-2190 (2022)	
	[61] Y. Negrín-Montecelo, X.-T. Kong, <u>L.V. Besteiro</u> , E. Carbó-Argibay, Z. M. Wang, M. Pérez-Lorenzo, A.O. Govorov, M. Comesaña-Hermo, M.A. Correa-Duarte. <b>Synergistic Combination of Charge Carriers and Energy-Transfer Processes in Plasmonic Photocatalysis.</b> <i>ACS Applied Materials &amp; Interfaces</i> <b>14</b> , 35734-35744 (2022)	
	[60] A. Movsesyan, <u>L.V. Besteiro</u> , X.-T. Kong, Z.M. Wang, A.O. Govorov. <b>Engineering strongly chiral plasmonic lattices with achiral unit cells for sensing and photodetection.</b> <i>Advanced Optical Materials</i> <b>10</b> , 2101943 (2022)	

- [59] B. Puértolas\*, M. Comesaña Hermo\*, L.V. Besteiro\*, M. Vázquez González\*, M.A. Correa Duarte\*. **Challenges and Opportunities for Renewable Ammonia Production via Plasmon Assisted Photocatalysis.** *Advanced Energy Materials* **12**, 2103909 (2022) \* Corresponding authors
- [58] A. Movsesyan, E.Y. Santiago, S. Burger, M.A. Correa Duarte, L.V. Besteiro\*, Z.M. Wang\*, A.O. Govorov\*. **Plasmonic Nanocrystals with Complex Shapes for Photocatalysis and Growth: Contrasting Anisotropic Hot Electron Generation with the Photothermal Effect.** *Advanced Optical Materials* **10**, 2102663 (2022) \* Corresponding authors
- [57] A. Movsesyan, L.V. Besteiro, Z.M. Wang, A.O. Govorov. **Mie Sensing with Neural Networks: Recognition of Nano Object Parameters, the Invisibility Point, and Restricted Models.** *Advanced Theory and Simulations* **5**, 2100369 (2022)
- [56] O. Ávalos-Ovando, E.Y. Santiago, A. Movsesyan, X.-T. Kong, P. Yu, L.V. Besteiro, L. Khosravi Khorashad, H. Okamoto, J.M. Slocik, M.A. Correa-Duarte, M. Comesaña-Hermo, T. Liedl, Z.M. Wang, G. Markovich, S. Burger, A.O. Govorov. **Chiral Bioinspired Plasmonics: A Paradigm Shift for Optical Activity and Photochemistry.** *ACS Photonics* **9**, 2219-2236 (2022)
- [55] R. Marin, A. Benayas, N. García-Carillo, J. Lifante, J. Yao, D. Mendez-Gonzalez, F. Sanz-Rodríguez, J. Rubio-Retama, L.V. Besteiro, D. Jaque. **Nanoprobes for Biomedical Imaging with Tunable Near Infrared Optical Properties Obtained via Green Synthesis.** *Advanced Photonics Research* **3**, 2100260 (2022)
- [54] L.V. Besteiro\*, A. Movsesyan, O. Ávalos-Ovando, S. Lee, E. Cortés, M.A. Correa-Duarte, Z.M. Wang\*, A.O. Govorov\*. **Local Growth Mediated by Plasmonic Hot Carriers: Chirality from Achiral Nanocrystals Using Circularly Polarized Light.** *Nano Letters* **21**, 10315-10324 (2021) \* Corresponding authors
- [53] O. Ávalos-Ovando, L.V. Besteiro, A. Movsesyan, G. Markovich, T. Liedl, K. Martens, Z.M. Wang, M.A. Correa-Duarte, A.O. Govorov. **Chiral Photomelting of DNA-Nanocrystal Assemblies Utilizing Plasmonic Photoheating.** *Nano Letters* **21**, 7298-7308 (2021)
- [52] W. Wang, L.V. Besteiro, P. Yu, F. Lin, A.O. Govorov, H. Xu, Z.M. Wang. **Plasmonic Hot-Electron Photodetection With Quasi-Bound States in the Continuum and Guided Resonances.** *Nanophotonics* **10**, 1911 (2021)
- [51] S. Panuganti, L.V. Besteiro, E.S. Vasileiadou, J.M. Hoffman, A.O. Govorov, S.K. Gray, M.G. Kanatzidis, R.D. Schaller. **Distance Dependence of Forster Resonance Energy Transfer Rates in 2D Perovskite Quantum Wells via Control of Organic Spacer Length.** *Journal of the American Chemical Society* **143**, 4244 (2021)
- [50] X. Han, L.V. Besteiro, C.S.L. Koh, H.K. Lee, I.Y. Phang, G.C. Phan-Quang, J.Y. Ng, H.Y.F. Sim, C.L. Lay, A.O. Govorov, X.Y. Ling. **Intensifying Heat Using MOF Isolated Graphene for Solar Driven Seawater Desalination at 98% Solar-to-Thermal Efficiency.** *Advanced Functional Materials* **31**, 2008904 (2021)
- [49] J.-Y. Xu, X. Tong, L.V. Besteiro, X. Li, C. Hu, R. Liu, A.I. Channa, H. Zhao, F. Rosei, A.O. Govorov, Q. Wang, Z.M. Wang. **Rational Synthesis of Novel “Giant” CuInTeSe/CdS Core/Shell Quantum Dots for Optoelectronics.** *Nanoscale*, (2021)
- [48] H. Zhang, L.V. Besteiro, J. Liu, C. Wang, G.S. Selopal, Z. Chen, D. Barba, Z.M. Wang, H. Zhao, G.P. Lopinski, S. Sun, F. Rosei. **Efficient and Stable Photoelectrochemical Hydrogen Generation Using Optimized Colloidal Heterostructured Quantum Dots.** *Nano Energy* **79**, 105416 (2021)
- [47] F. Li, M. Zhang, D. Benetti, L. Shi, L.V. Besteiro, H. Zhang, J. Liu, G.S. Selopal, S. Sun, Z.M. Wang, Q. Wei, F. Rosei. **“Green”, Gradient Multi-Shell CuInSe<sub>2</sub>/(CuInSe<sub>x</sub>S<sub>1-x</sub>)<sub>5</sub>/CuInS<sub>2</sub> Quantum Dots for Photo-Electrochemical Hydrogen Generation.** *Applied Catalysis B: Environmental* **280**, 119402 (2021)
- [46] E. Cortés, L.V. Besteiro, A. Alabastri, A. Baldi, G. Tagliabue, A. Demetriadou, P. Narang. **Challenges in Plasmonic Catalysis** *ACS Nano* **14**, 16202-16219 (2020)
- [45] Y. Wang, Q. Zhang, Y. Wang, L.V. Besteiro, Y. Liu, H. Tan, Z.M. Wang, A.O. Govorov, J.Z. Zhang, J.K. Cooper, J. Zhao, G. Chen, M. Chaker, D. Ma. **Ultrastable Plasmonic Cu-Based Core-Shell Nanoparticles.** *Chemistry of Materials* (2020)
- [44] G.S. Selopal, M. Mohammadnezhad, L.V. Besteiro, O. Cavuslar, J. Liu, H. Zhang, F. Navarro Pardo, G. Liu, M. Wang, E.G. Durmusoglu, H.Y. Acar, S. Sun, H. Zhao, Z.M. Wang, F. Rosei **Synergistic Effect of Plasmonic Gold Nanoparticles Decorated Carbon Nanotubes in Quantum Dots/TiO<sub>2</sub> for Optoelectronic Devices.** *Advanced Science* **7**, 2001864 (2020)

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- [42] O. Ávalos-Ovando, L.V. Besteiro, Z.M. Wang, A.O. Govorov. **Temporal plasmonics: Fano and Rabi regimes in the time domain in metal nanostructures.** *Nanophotonics* **9**, 3587-3595 (2020)
- [41] C. Wang, X. Tong, W. Wang, J.-Y. Xu, L.V. Besteiro, A.I. Channa, F. Lin, J. Wu, Q. Wang, A.O. Govorov, A. Vomiero, Z.M. Wang. **Manipulating the Optoelectronic Properties of Quasi-type II CuInS<sub>2</sub>/CdS Core/Shell Quantum Dots for Photoelectrochemical Cell Applications.** *ACS Appl. Mater. Interfaces* **12**, 36277-36286 (2020)
- [40] E. Ashalley, K. Acheampong, L.V. Besteiro, P. Yu, A. Neogi, A.O. Govorov, Z.M. Wang. **Multitask Deep-Learning-Based Design of Chiral Plasmonic Metamaterials.** *Photonics Research* **8**, 1213-1225 (2020)
- [39] L. Nguyen, M. Dass, M. F. Ober, L.V. Besteiro, Z.M. Wang, B. Nickel, A.O. Govorov, T. Liedl, A. Heuer-Jungemann. **Chiral Assembly of Gold–Silver Core–Shell Plasmonic Nanorods on DNA Origami with Strong Optical Activity.** *ACS Nano* **14**, 7454–7461 (2020)
- [38] G. Galeotti, F. De Marchi, E. Hamzehpoor, O. MacLean, M. Rajeswara Rao, Y. Chen, L.V. Besteiro, D. Dettmann, L. Ferrari, F. Frezza, P.M. Sheverdyayeva, R. Liu, A.K. Kundu, P. Moras, M. Ebrahimi, M.C. Gallagher, F. Rosei, D.F. Perepichka, G. Contini. **Synthesis of Mesoscale Ordered Two-Dimensional  $\pi$ -Conjugated Polymers with Semiconducting Properties.** *Nat. Mater.* **19**, 874-880 (2020)
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- [36] L. Khosradi Khorashad, L.V. Besteiro, M.A. Correa-Duarte, S. Burger, Z.M. Wang, A.O. Govorov. **Hot Electrons Generated in Chiral Plasmonic Nanocrystals as a Mechanism for Surface Photochemistry and Chiral Growth.** *J. Am. Chem. Soc.* **142**, 4193-4205 (2020)
- [35] R. Marin, J. Lifante, L.V. Besteiro, Z.M. Wang, A.O. Govorov., F. Rivero, F. Alfonso, F. Sanz-Rodríguez, D. Jaque García. **Plasmonic Copper Sulfide Nanoparticles Enable Dark Contrast in Optical Coherence Tomography.** *Adv. Healthc. Mater.* **9**, 1901627 (2020)
- [34] H. Breitenborn, J. Dong, R. Piccoli, A. Bruhacs, L.V. Besteiro, A. Skripka, A.O. Govorov., L. Razzari, F. Vetrone, R. Naccache, R. Morandotti. **Quantifying the Photothermal Conversion Efficiency of Plasmonic Nanoparticles by means of Terahertz Radiation.** *APL Photonics* **4**, 126106 (2019)
- [33] W. Wang, L.V. Besteiro, T. Liu, C. Wu, J. Sun, P. Yu, L. Chang, Z.M. Wang, A.O. Govorov. **Generation of Hot Electrons with Chiral Metamaterial Perfect Absorbers: Giant Optical Chirality for Polarization-Sensitive Photochemistry.** *ACS Photonics* **6**, 3241-3252 (2019)
- [32] B. Klemmed, L.V. Besteiro, A. Benad, M. Georgi, Z.M. Wang, A.O. Govorov, A. Eychmüller. **Hybrid Plasmonic-Aerogel Materials as Optical Superheaters with Engineered Resonances.** *Angew. Chem.* **132**, 1713-1719 (2020)
- [31] A. Gellé, T. Jin, L. de la Garza, G.D. Price, L.V. Besteiro, A. Moores. **Applications of Plasmon-Enhanced Nanocatalysis to Organic Transformations.** *Chem. Rev.* **120**, 986-1041 (2019)
- [30] L. Chang, L.V. Besteiro<sup>\*</sup>, J. Sun, E.Y. Santiago, S.K. Gray, Z.M. Wang<sup>\*</sup>, A.O. Govorov<sup>\*</sup>. **Electronic Structure of the Plasmons in Metal Nanocrystals: Fundamental Limitations for the Energy Efficiency of Hot Electron Generation.** *ACS Energy Lett.* **4**, 2552-2568 (2019)
- <sup>\*</sup> Corresponding authors
- [29] L.V. Besteiro, P. Yu, Z.M. Wang, A.W. Holleitner, G.V. Hartland, G.P. Wiederrecht, A.O. Govorov. **The Fast and the Furious: Ultrafast Hot Electrons in Plasmonic Metastructures. Size and Structure Matter.** *Nano Today* **27**, 120-145 (2019)
- [28] T. Liu, L.V. Besteiro, T. Liedl, M.A. Correa-Duarte, Z.M. Wang, A.O. Govorov. **Chiral Plasmonic Nanocrystals for Generation of Hot Electrons: Toward Polarization-Sensitive Photochemistry.** *Nano Lett.* **19**, 1395 (2019)
- [27] A.H. Proppe, M.H. Elkins, O. Voznyy, R.D. Pensack, F. Zapata, L.V. Besteiro, L.N. Quan, R. Quintero-Bermudez, P. Todorovic, S.O. Kelley, A.O. Govorov, S.K. Gray, I. Infante, E.H. Sargent, G.D. Scholes. **Spectrally Resolved Ultrafast Exciton Transfer in Mixed Perovskite Quantum Wells.** *J. Phys. Chem. Lett.* **10**, 419 (2019)

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- [24] G. Galeotti, F. de Marchi, T. Taerum, L. V. Besteiro, M. El Garah, J. Lipton-Duffin, M. Ebrahimi, D. F. Perepichka, F. Rosei. **Surface-mediated assembly, polymerization and degradation of thiophene-based monomers.** *Chem. Sci.* **10**, 5197-5175 (2019)
- [23] R. Marin\*, A. Skripka\*, L.V. Besteiro\*, A. Benayas, Z.M. Wang, A.O. Govorov, P. Canton, F. Vetrone. **Highly Efficient Copper Sulfide-Based Near-Infrared Photothermal Agents: Exploring the Limits of Macroscopic Heat Conversion.** *Small* **14**, 1803282 (2018)  
\* Authors contributed equally
- [22] P. Yu, L.V. Besteiro, Y. Huang, L. Fu, H.H. Tan, C. Jagadish, G.P. Wiederrecht, A.O. Govorov, Z.M. Wang. **Broadband Metamaterial Absorber.** *Adv. Opt. Mat.* **7**, 1800995 (2018)
- [21] L.M. Kneer, E.M. Roller, L.V. Besteiro, R. Schreiber, A.O. Govorov, T. Liedl. **Circular Dichroism of Chiral Molecules in DNA-Assembled Plasmonic Hotspots.** *ACS Nano* **12**, 9110 (2018)
- [20] P. Yu, L.V. Besteiro, J. Wu, Y. Huang, Y. Wang, A.O. Govorov, Z.M. Wang. **Metamaterial Perfect Absorber with Unabated Size-Independent Absorption.** *Opt. Express* **26**, 20471 (2018)
- [19] X.-T. Kong, L.V. Besteiro, Z.M. Wang, A.O. Govorov. **Plasmonic Chirality and Circular Dichroism in Bio-assembled and Non-biological Systems: Theoretical Background and Recent Progress.** *Adv. Mater.* 1801790 (2018)
- [18] L.V. Besteiro, X.-T. Kong, Z.M. Wang, F. Rosei, A.O. Govorov. **Plasmonic Glasses and Films Based on Alternative Inexpensive Materials for Blocking Infrared Radiation.** *Nano Lett.* **18**, 3147 (2018)
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- [14] G. Hartland, L.V. Besteiro, P. Johns and A.O. Govorov. **What's so Hot about Electrons in Metal Nanoparticles?.** *ACS Energy Lett.* **2**, 1641 (2017)
- [13] E.-M. Roller\*, L.V. Besteiro\*, C. Pupp, L.K. Khorashad, A.O. Govorov, T. Liedl. **Hot Spot-Mediated non-Dissipative and Ultrafast Plasmon Passage.** *Nature Phys.* **13**, 761 (2017)  
\* Authors contributed equally
- [12] L.V. Besteiro\*, H. Zhang, J. Plain, G. Markovich, Z.M. Wang, A.O. Govorov\*. **Aluminum Nanoparticles with Hot Spots for Plasmon-Induced Circular Dichroism of Chiral Molecules in the UV Spectral Interval.** *Adv. Opt. Mater.* **5**, 1700069 (2017)  
\* Corresponding authors
- [11] A. Naldoni, U. Guler, Z.M. Wang, M. Marelli, F. Malara, X. Meng, L.V. Besteiro, A.O. Govorov, A.V. Kildishev, A. Boltasseva, V.M. Shalaev. **Broadband Hot-Electron Collection for Solar Water Splitting with Plasmonic Titanium Nitride.** *Adv. Opt. Mater.* **5**, 1601031 (2017)
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\* Corresponding authors
- [9] L.V. Besteiro\*, A.O. Govorov\*. **Amplified Generation of Hot Electrons and Quantum Surface Effects in Nanoparticle Dimers with Plasmonic Hot Spots.** *J. Phys. Chem. C* **120**, 19329 (2016)  
\* Corresponding authors

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- INVITED TALKS**
- [8] META - International Conference on Metamaterials, Photonic Crystals and Plasmonics - Torremolinos, Spain 2022  
L.V. Besteiro, M.A. Correa-Duarte, Z.M. Wang, A.O. Govorov. **Chiral Growth of Achiral Plasmonic Nanocrystals under Circularly Polarized Light**
- [7] CECAM - Light-matter interaction and ultrafast nonequilibrium dynamics in plasmonic materials - University of Warwick, UK 2022  
L.V. Besteiro. **Plasmonic Hot Carrier Excitation: Connecting Quantum and Semiclassical Models**
- [6] The Thinking Institute - CINBIO, Vigo, Spain 2022  
L.V. Besteiro. **A Theoretical Perspective on the Connection Between Chirality and Photocatalysis in Plasmonic Nanocrystals**
- [5] META - International Conference on Metamaterials, Photonic Crystals and Plasmonics (held online), Warsaw, Poland 2021  
L.V. Besteiro, Z.M. Wang, A.O. Govorov. **Modeling plasmonic hot-electron generation and their role in photocatalysis**
- [4] METANANO (held online), Tbilisi, Georgia 2020  
L.V. Besteiro, Z.M. Wang, A.O. Govorov. **Theoretical Perspective on the Generation of Plasmonic Hot Carriers**
- [3] META - International Conference on Metamaterials, Photonic Crystals and Plasmonics, Lisbon, Portugal 2019  
L.V. Besteiro, T. Liu, Z.M. Wang, A.O. Govorov. **Understanding Hot Electron Generation in Plasmonic Nanocrystals and Delineating New Research Avenues**
- [2] MRS-SMM International Material Research Congress, Cancun, Mexico 2018  
L.V. Besteiro, X.-T. Kong, Z.M. Wang, A.O. Govorov. **Hot Electron Generation for Solar Energy Conversion: Phenomenological Theoretical Framework and Practical Design Insights**
- [1] META - International Conference on Metamaterials, Photonic Crystals and Plasmonics, Marseille, France 2018  
L.V. Besteiro, X.-T. Kong, Z.M. Wang, F. Rosei, A.O. Govorov. **Plasmonic Nanomaterials as Infrared-Blocking Radiation Filters and Energy-Saving Glasses**
- SEMINARS**
- [4] CeNS, LMU, Munich, Germany 2022  
**Plasmonic Nanostructures: Internal Carriers Dynamics, Photocatalysis and Chiral Photogrowth**
- [3] DIPC, San Sebastian, Spain 2017  
**Hot Carrier Generation in Plasmonic Nanoparticles**
- [2] IFFS - UESTC, Chengdu, Sichuan, China 2017  
**Hot Carrier Generation in Plasmonic Nanoparticles**
- [1] CMSS Colloquium, Athens, Ohio, USA 2016  
**Hot Carrier Generation in Plasmonic Nanoparticles**
- TALKS**
- [14] 4th Annual Meeting - CINBIO, Vigo, Spain 2021  
L.V. Besteiro. **Chiral Plasmonic Photocatalysis**
- [13] Workshop on Luminescence & Magnetism in Molecules & Materials ( $LM^3$ ), Ottawa, Canada 2019  
L.V. Besteiro, X.-T. Kong, Z.M. Wang, F. Rosei, A.O. Govorov. **Designing Energy-Saving Glasses with Embedded Plasmonic Nanoparticles**
- [12] APS March Meeting, Boston, Massachusetts, USA 2019  
L.V. Besteiro, X.-T. Kong, Z.M. Wang, F. Rosei, A.O. Govorov. **Energy-Saving Meta-Glasses with Embedded Plasmonic Nanoparticles**
- [11] Single Nanostructures, Nanomaterials, Aerogels and their Interactions: Combining Quantum Physics and Chemistry, Dresden, Germany 2018  
L.V. Besteiro, X.-T. Kong, A.O. Govorov. **Plasmonic Nanoparticles in Near-Field Interaction: Energy Conversion and Coherent Plasmon Transfer**

- [10] APS March Meeting, Los Angeles, California, USA 2018  
L.V. Besteiro, E.-M. Roller, L. Khosravi Khorashad, T. Liedl, A.O. Govorov. **Ultra-Fast Light Energy Transfer with Suppressed Losses Through Hot-Spots in Heterogeneous Plasmonic Arrays**
- [9] Ohio University Postdoctoral Symposium, Athens, Ohio, USA 2017  
L.V. Besteiro, L. Khosravi Khorashad, X.-T. Kong, A.O. Govorov. **Plasmonics: Fundamentals and Applications**
- [8] APS March Meeting, New Orleans, Louisiana, USA 2017  
L.V. Besteiro, X.-T. Kong, A.O. Govorov. **Modeling the Generation of Hot Plasmonic Electrons in Metal Nanocrystals with Hot Spots. A Quantum Model**
- [7] APS March Meeting, Baltimore, Maryland, USA 2016  
L.V. Besteiro, H. Zhang, A.O. Govorov. **Kinetic Density Functional Theory for Plasmonic Nanostructures**
- [6] APS March Meeting, San Antonio, Texas, USA 2015  
L.V. Besteiro, H. Zhang, K. Gungor, H.V. Demir, A.O. Govorov. **Plasmonic Metastructures Exhibiting a Narrow Transparency Window Within a Broad Extinction Spectrum**
- [5] ANM - International Conference on Advanced Nano Materials, Aveiro, Portugal 2014  
L.V. Besteiro, L.J. Gallego, M.M.G. Alemany. **DX-like Defect Formation in Zinc-Blende III-V Semiconductor Nanowires**
- [4] APS March Meeting, Denver, Colorado, USA 2014  
L.V. Besteiro, L. Tortajada, J. Souto, L.J. Gallego, J.R. Chelikowsky, M.M.G. Alemany. **Efficient n-type Doping of Zinc-Blende III-V Semiconductor Nanowires**
- [3] APS March Meeting, Portland, Oregon, USA 2010  
L.V. Besteiro, L. Tortajada, M.L. Tiago, L.J. Gallego, J.R. Chelikowsky, M.M.G. Alemany. **Efficient n-type Doping of Zinc-Blende III-V Semiconductor Quantum Dots**
- [2] IAPS International Conference of Physics Students, Graz, Austria 2010
- [1] IAPS International Conference of Physics Students, Split, Croatia 2009

#### POSTERS

- [4] DCMS Materials 4.0. Deep Materials: Perspectives on data-driven materials research, Dresden, Germany 2018  
L.V. Besteiro, X.-T. Kong, Z.M. Wang, A.O. Govorov. **Theoretical Framework for the Computational Study of Hot Electron Generation in Metal Nanoparticles**
- [3] Ohio University Postdoctoral Symposium, Athens, Ohio, USA 2017  
L.V. Besteiro, L. Khosravi Khorashad, N. Liu, A. Kuzyk, E.-M. Roller, T. Liedl, A.O. Govorov. **Chiral Nanocrystal Bio-Assemblies with Plasmonic and Excitonic Resonances**
- [2] Statussymposium on Functional Macroscopic Systems, Hannover, Germany 2016  
L.V. Besteiro, L. Khosravi Khorashad, N. Liu, A. Kuzyk, E.-M. Roller, T. Liedl, A.O. Govorov. **Chiral Nanocrystal Bio-Assemblies with Plasmonic and Excitonic Resonances**
- [1] NANOSA, Dresden, Germany 2015  
L.V. Besteiro, H. Zhang, A.O. Govorov. **Kinetic Density Functional Theory for Plasmonic Nanostructures. Theoretical Overview and Applications**



**TEACHING****Ohio University, Athens, Ohio, USA**

Teaching:

- *Graduate*  
PHYS 6031: Electrodynamics (**Substitute Lecturer**, 2 weeks) Spring 2015 & 2016  
Textbook: J. D. Jackson, Classical Electrodynamics 3<sup>rd</sup> Ed.
- *Undergraduate*  
PHYS 3011, 5011: Thermal Physics (**Substitute Lecturer**, 2 weeks) Spring 2015 & 2016  
Textbook: Daniel V. Schroeder, Introduction to Thermal Physics

Additional experience:

- *Prof. Development - Participation* on Seminar PHYS 8101: Teaching College Physics. Spring 2017  
Overview of evidence-based Physics education and Active Learning.
- *Outreach* - Science demonstrations and activities at a variety of Family Science Events, Department's Open Houses and Regional Science Fairs Spring 2017

**SERVICE****Reviewer**

2015 – Present

- ACS Applied Nano Materials
- ACS Nano
- ACS Photonics
- Advanced Materials Interfaces
- Advanced Optical Materials
- Applied Physics Letters
- Applied Sciences
- ChemSusChem
- Communications Physics
- Entropy
- Europhysics Letters
- Journal of Electronic Science and Technology
- Journal of Materials Chemistry
- Journal of Physical Chemistry
- Journal of Physics Communications
- Journal of Physics D: Applied Physics
- Materials
- Materials & Design
- Materials Today Communications
- Metals
- Nanomaterials
- Nanophotonics
- Nano Energy
- Nanoscale
- Nanoscale Research Letters
- Nature Communications
- New Journal of Physics
- Physical Review Applied
- Physical Review B
- Physical Review Letters
- Scientific Reports
- Semiconductor Science and Technology
- Sensors
- Symmetry

**CINBIO - Committee Participation, University of Vigo**

- Equity Committee 2022 – Present

**CINBIO - Public Science, University of Vigo**

- Open House 2021
- Open House 2022

**5th Annual Meeting CINBIO, University of Vigo** 2022

- Organizing Committee
- Scientific Committee

**Postdoctoral Association, Ohio University**

- Coordinator 2016 – 2017
  - Organization of mentoring sessions for postdoctoral scholars
  - Organization of Postdoctoral Symposium

**Student Expo, Ohio University**

- Judge 2017

[CV compiled on 2022-10-19]