

SINUHÉ PEREA-PUENTE

(+44) 7436.944599, (+34) 634-47.59.49 ◊ sinuhe.perea@kcl.ac.uk ◊ Burgos (Spain), 1997

I. ACADEMIC EDUCATION

◊ Formation

KCL.- King's College London, Strand *January 2020-Present day*
- MPhil/PhD Photonics & Nanotechnology, *Novel Nanophotonic Phenomena* Group

UNIOVI.- University of Oviedo, Asturias *September 2014 - July 2019*
- PCEO Double Degree in Physics and Mathematics, **264+252 ECTS Credits**
- Graduate (BHons) in Physics Sciences, **8.397 / 10.000 (2.625 / 4.000)**
- Graduate (BHons) in Mathematics, **7.999 / 10.000 (2.512 / 4.000)**

CSIC.- Autonomous University of Madrid, Tres Cantos *August 2015-September 2015*
- Research-stay at *Instituto de Ciencias Matemáticas* (CSIC), Analytic Number Theory

UBU.- University of Burgos, Castille and Leon *May 2014 - June 2014*
- College Admission: A-Levels Overall Score (R.D. 1267/1995, 10th June): **9.129 / 10.000**
- College Admission: A-Levels Physics & Mathematics (Specific Phase): **9.800 / 10.000**

IBO.- International Baccalaureate, Cardiff *September 2012-May 2014*
- International Baccalaureate Diploma Programme (IB012014D0004050022): **37 / 42 points**

Rafael Frühbeck Conservatory of Music, Burgos *October 2007-July 2012*
- Elemental Degree in Music: Viola & Principal Viola Assistant of the "*Orquesta Piccola*"

Ministry of Education "Señora del Prado", Valladolid *September 2004-June 2005*
- Acceleration Full School Year and Specific Curricular Adaptation (B.O.E 4127/1996, 14th February)

◊ Certification

International English Language Testing System, British Council *January 2020*
- Test Report Form (ES024/004516) Overall Band Score 7.5 (8.5/8.0/6.0/6.5). CEFR-C1

European Union Aviation Safety Agency, Luxembourg *April 2021*
- Unmanned Aircraft System Remote Pilot (LUX/RP/rXXX) Open Category A1+A3

Guinness World Records, Virtual Runners *September 2021*
- Most users to complete a remote 10 km in 24 hours: World Ranking 2735

Instituto de las Emergencias, IEDUCAE *September 2021*
- First Respondent in Emergency Situations

University of Helsinki, Finland *December 2021*
- Elements of IA: pm6stx81xgn

The MathWorks, Inc., MATLAB *October 2021*
- MiniHack: Fibonacci's Last i-Dream

II. EXPERIENCE: TEACHING, ROLES AND RESEARCH

◊ Teaching *University of East London, Docklands Campus*
· (21/22) *Mathematical Applications for Architec., Comp. Sci. and Engineer.*, ppal lecturer.

◊ Teaching *King's College London BSc-MSci Physics*
· (21/22) *Mathematical Methods for Th. Physics (2nd Sem.)*, assistant to *Dr. Evgeny Kozik*
· (21/22) *Classical Physics: Electromagnetism (2nd Sem.)*, assistant to *Dr. Aliaksandra Rakovich*

- (21/22) *Physics Skill and Techniques (annual)*, assistant to *Dr. Bozidar Butorac*
- (21/22) *Classical Physics: Matter (1st Sem.)*, assistant to *Prof. Klaus Suhling*
- (20/21) *Mathematics for Physics (2nd Sem.)*, assistant to *Reader F.J. Rodríguez-Fortuño*
- (20/21) *Mathematics for Physics (1st Sem.)*, assistant to *Prof. Samjid Mannan*

◇ **Roles and Positions**

Current or with minimum duration 1 yr.

Institute of Physics Publishing, IoP

June 2022-Present day

- Author Collaborator for Physics World

Spanish Society Academic Excellence, SEDEA

December 2021-Present day

- Numerary Member, 6427

King's Doctoral Student Committee

October 2021-Present day

- A & S Representative King's College London Research Culture Committee

King's Doctoral Student Association, KCLSU

May 2021-Present day

- Representative for Faculty of Natural, Mathematical & Engineering Sciences

Faculty Postgraduate Research Student Committee, NMES

April 2021-Present day

- Postgraduate Student Department Representative of Physics

King's College LIONS Student Chapter, SPIE/OSA

November 2020-Present day

Former Member and Treasurer - London International Optics and Nanotechnologies Student,

Vicerectorate of Students, UNIOVI

September 2018-July 2019

- Full Scholarship "*Beca Colaboración Servicios Informáticos*", Campus *El Cristo A*

◇ **Publications**

DOI Link Available in Title

- **5.** Perea-Puente, S. and Rodríguez-Fortuño, F.J. : **Complex wave-vectors in lossy materials: from polarisation-loss locking to bullseye metasurface**, *Proceedings for SPIE Photonics Europe*, (2022).
- **4.** Perea-Puente, S. and Rodríguez-Fortuño, F.J. : **Dependence of evanescent wave polarization on the losses of guided optical modes**, *Phys. Rev. B*, **104**, 085417 (2021).
- **3.** Cajiao-Valle, I. and Perea-Puente, S.: **Arrow:Arquero Democracia**, *L. Alum.***10**, 2340-5805 (2015).
- **2.** Perea-Puente, S.: **El Problema de los Discos Apilados**, *Matgazine* , **6**, Carroll 2174-503X (2015).
- **1.** Chapter, **Impulso Investigación en Jóvenes**, *IMINJO*, (Burgos) 978-84-92973-09-5 (2013).

◇ **Thesis**

Full-text Link Available in Title

- **5.** MPhil Thesis: **Topological Polarisation Phenomena in Near-Field Photonics**, under the supervision of *Reader Francisco J. Rodríguez-Fortuño* Photonics & Nanotechnology, KCL (2021).
- **4.** Grade Thesis (Physics): **On the dynamic of Skyrmions in Micromagnetism**, under the supervision of *Senior Lecturer Rosario Díaz-Crespo* at Department of Applied Physics, UNIOVI (2019).
- **3.** Grade Thesis (Mathematics): **Algebra and Numbers: Open Problems and Applications**, under the supervision of *Professor Santos González-Jiménez* at Department of Algebra, UNIOVI (2019).
- **2.** Short-Stay Memory: **First Steps in Number Theory**, under the supervision of *Senior Lecturer Dulcinea Raboso-Paniagua* at CSIC-Instituto Ciencias MATemáticas (2015).
- **1.** IB Extended Essay: **Sobre la existencia de los números perfectos impares: Estudio de casos en los naturales**, under the supervision of *Dr. Constantino Martínez de la Fuente* (2014) □.

III. PARTICIPATION IN COURSES AND CONFERENCES

- ◇ **Speaker** Some Presentations are Available in the Titles
- European Parliament, Brussels** *June 2022-July 2022*
- Participant with Full Scholarship, *Euronomics II, Jornadas sobre Políticas Públicas*
- Eotvos Loránd University, Budapest** *June 2022-June 2022*
- Participant with Full Scholarship Alfréd Rényi Institute of Mathematics, *Topics in number theory: ancient problems, recent results*
- META, Photonic Crystals and Plasmonics Conference, Torremolinos** *June 2022-July 2022*
- (Author) Near-field excitation and manipulation: from Janus multipoles to near-field coldspots
- Congreso Internacional VIII Centenario 'El mundo de las catedrales'** *June 2022-July 2022*
- Proyecto ARGOS: Aritmética en los Rosetones GÓticoS. El caso de la Catedral de Burgos
- Pint of Science Festival, University of Burgos (Spain)** *April 2022-May 2022*
- Shedding light to Science: Discovering Photonics
- KCL 3MT Competition Grand Final, Bush House Auditorium** *April 2022-May 2022*
- Shedding light on the invisible: From Nanophotonics to Biomedicine via complex wave-vectors
- SPIE Photonics Europe, Strasbourg** *March 2022-April 2022*
- Complex wave-vectors in lossy materials: from polarisation-loss locking to bullseye metasurface
- CLINIC: Programa alto rendimiento Joven Empresa** *August 2021-September 2021*
- 15th Edition, “CEBRA”: *Certification Economy w. Blockchain Reciprocal Architecture*
- Xplorer Project: Powered CISE-Santander, OVIEDO EMPRENDE** *March 2018-July 2019*
- 10th Edition, “wear2fit”: *Nanoscience to your Life*, Talud de la Ería
- 11st Edition, “CARsGo”: *Networking System for Vehicles*, Coimbra
- Yes, we are Innovation (3rd Edition), SERESCO** *October 2017-November 2017*
- Regional Classified, “NUBIA”: *Collaborative Platform for Resource Optimization for SME*
- Isabel I University Challenge (1st Edition), HIPERBARIC** *November 2013-July 2014*
- Project Participant “MelCAR”: Odra Pisuerga, Melgar de Fernamental
- Encounter Young Investigators (4th Edition), IMINJO** *February 2013*
- Speaker, Concepción Assembly Hall “*On the Non-Existence of Odd Perfect Numbers*”
- Spring Encounter (4th Edition), Miguel de Guzmán SOCYLEM** *May 2009*
- Speaker, López Aranguren Assembly Hall “*El problema de las monedas apiladas*”, Ávila
- ◇ **Poster** Some Posters are Available in the Titles
- NMES Faculty PhD Poster Competition Representant, King’s College London** *March 2022*
- *Heuristic approach to i-numbers in NF-EM: from polarisation-loss control to bullseye metasurface*
- Institute of Physics (2nd Edition), IOPP** *July 2021*
- *Dependence of evanescent wave on the polarization on the losses of guided optical modes*
- London Plasmonics Forum (7th Edition), Reactive Plasmonics** *June 2021*
- *Coupling of polarization of evanescent wave and losses in a waveguide*
- Photonics Online Meetup (3rd Edition), POM** *January 2021*
- Poster, *The dependence of evanescent wave on the polarization on the losses of guided optical modes*
- International Day of Light, UNESCO** *May 2020*
- Multimedia presentation, *Crooks radiometer or light-mill*
- Asociace pro mládež, vědu a techniku (AMAVET), MILSET** *September 2014-October 2014*
- Poster, *On the existence of odd perfect numbers: Study of cases* at University of Zsolna

- ◇ **Attendant** With certificate
- Optical MEMS and Nanophotonics, IEEE Photonics** *August 2021*
 - Summer School Future Directions in Nanophotonic, Biophotonic Sensors and Limits of Metastructures
- University of Extremadura, Campus Yuste** *June 2021-July 2021*
 - Participant with Full Scholarship, *Diplomacia en los Mundos de Carlos V: Negociación y Diálogo Futuro de Europa: Oportunidades, Retos Compartidos y Globales Relaciones UE-ALC: Agenda Renovada en el Marco de los ODS*
- Instituto de Investigación e Innovación Educativa, UNIOVI** *June 2021*
 - Aplicación del Modelo de la Flipped Classrom a la Docencia Universitaria
- Waves in Time-Varying Media Workshop Series, EPSRC** *March 2021*
 - Theory of Wave Propagation in Time-Varying Media (1st Edition), Imperial College London
- Opening Conference Doctoral Programm in Mathematics, IMUS** *November 2020*
 - Polytopes: Algebra, Combinatorics and Optimization, University of Seville
- Summer Courses (40th Edtion) UPV, San Sebastián** *July 2020*
 - Nanophotonics of 2D Materials (3rd Edition), University of the Basque Country
- Menéndez Pelayo International University, Santander** *July 2019*
 - Participant with Full Scholarship, *Artificial Intelligence: Dilemas actuales alrededor de la seguridad, propiedad y explotación de datos* directed by Prof. Santos González
- Big Data and Artificial Intelligence: How improve daily life** *April 2018*
 - Attendant, Polytechnic School of Engineering, Gijón (UNIOVI)
- Menéndez Pelayo International University, Santander** *July 2015*
 - Participant with Full Scholarship, *Matemáticas para todo y todos* directed by Prof. Santos González
- Mathematical Talent Stimulation Project, ESTALMAT** *April 2009-June 2013*
 - Participant, Registered in the Scientific Committee Registry as BU-289 □.
- ◇ **Chair**
- Thomas Young Center, Queen Mary University** *May 2021*
 - London Centre Theory & Simulation of Materials & Molecules, The Octagon, Queens' Building

IV. AWARDS AND HONOURS

- Wolfram Summer School Physics Project Scholarship** *July 2022*
 - *Wolfram Headquarters Champaign, Illinois*
- Changemaker of the Year** *May 2022*
 - *King's College London Student Union, KDSA Winner*
- Third Year PhD Poster Competition, King's College London** *February 2022*
 - *Department of Physics and Natural Mathematics Engineering Science Faculty Winner*
- Consejo Superior Investigaciones Científicas, ICMAT** *August 2015-November 2015*
 - Best Memory Award *ex-aequo* (B.O.E. 12462/2015, 18th November), UAM Madrid

- Instituto de Investigaciones Científicas y Ecológicas, INICE** *September 2014-October 2014*
 - Spanish representant in the 10th Edition of *Young European Exposcience*
- Young Researchers Contest (27th Edition), CEULAJ-MECD** *September 2014*
 - “Mención Especial Jurado de todas las Áreas” (B.O.E. 11740/2014, 3rd November), Mollina
- Hiperbaric Challenge (1st Edition), Isabel I University** *November 2013-July 2014*
 - Business Entepreneurship Award, Burgos
- European Mathematical Kangaroo, AKSF** *April 2013-April 2014*
 - National First Place: Fifth Level (20th Edition, 2013)
 - National First Place: Sixth Level (21st Edition, 2014)
- Spanish Physics Olympiad for Bachillerato (6th Form), RSEF** *February 2014-May 2014*
 - Honorable Mention (25th Edition, 2014), A Coruña
- Spanish Chemistry Olympiad for Bachillerato (6th Form), RSEQ** *February 2013-April 2014*
 - Honorable Mention (26th Edition, 2013), Alicante
 - Silver Medal (27th Edition, 2014), Oviedo
- Pedro Puig Adam Contest, Universidad Complutense Madrid** *May 2013*
 - Silver Medal (30th Edition, 2013), Madrid
- Spanish Math Olympiad for Bachillerato (6th Form), RSME** *February 2012-April 2014*
 - Classified as *Third Year Compulsory 2ry Education Student* (48th Edition, 2012), Santander
 - Local Gold Medal (49th Edition, 2013), Bilbao
 - Local Gold Medal (50th Edition, 2013), Requena
- Mathematics Olympiad on Secondary Education, FESPM** *May 2009-June 2012*
 - Best 1st-Year of Compulsory 2ry Education Student (17th Local Edition, 2009), Oña (Burgos)
 - Best 2nd-Year of Compulsory 2ry Education Student (18th Local Edition, 2010), Aranda (Burgos)
 - First Regional Classified (18th Regional Edition, 2010), Ávila
 - National Winner (19th National Edition, 2010), Palma de Mallorca
 - Best 4th-Year of Compulsory 2ry Education Student (20th Local Edition, 2012), Briviesca (Burgos)
 - Group Regional Winner (20th Regional Edition, 2012), Real Sitio de San Ildefonso (Spain) □.

V. TECHNICAL SKILLS

Languages	English (7.5 IELTS), Deutsch (A2), Spanish (Native) Russian (A1), Korean (A1), Python, LaTeX
Computer Tools	Office, Photoshop/GIMP, Illustrator/Inkscape, Prezi, DaVinci
Design Software	AutoCAD, Sketchup, Geogebra, Cabri-Geometre,
Digital Electronic	Raspberry Pi, Arduino, PIC16F87X, Nanode
Operating Systems	Windows, GNU/Linux, MS-DOS
Scientific Software	MatLab/Octave, Mathematica, COMSOL, CST R, ROOT, Maxima, LINGO, gretl, GAP □.

VI. ADDITIONAL MERITS

- Sociedade Anónima de Xestión do Plan Xacobeo** *July 2010-August 2010*
 - Way of Saint James (French Way) from Burgos to Santiago of Compostela
- King’s College London Disability Support Team** *November 2021-June 2022*
 (20/21) Disability Support MSc. Thesis Sustainable solutions, IPCC and Solar Cells
 (21/22) Disability Support BSc. Fundamentals of Nanotechnology -

King's College London Language Resources Centre
- Modern Language Centre, Spanish Language Volunteer Practising

February 2022-April 2022

Annals Improbable Research

- Luxuriant Flowing Hair Club for Scientists™ Member (LFHCfS)

April 2022-May 2022

Interest in research fields

September 2016-Present day

- Besides my Official Plan of Double Degree in Physics and Mathematics, I have also studied other modules at Uniovi (*Photonics (honours), Nanoscience and Nanotechnology, Kinetics of Fluid and Plasmas, Partial Derivative Equations, High Energy Physics*), King's College London (*Advanced Photonics*), UNED (*Introduction to Business, Calculus for Business (honours), Advanced Mathematics for Business, Sociology (Honours)*), LAB University of Applied Sciences (*Developing Professional Competences, Orientation to Sustainability Thinking, Intercultural Awareness, Environmental Cycles, Technological Cycles, Climate Change and Sustainability, Environmental Technologies (honours), Orientation to Sustainability Thinking*) and Linnaeus University (*Elementary Number Theory & Cryptography (honours), Quantum Mechanics II (honours), Advanced Quantum Mechanics (honours), Computational Physics I (honours), Computational Physics II, Mathematical Methods (honours), Classical Electrodynamics (honours), Solid State Physics*) in order to supplement and increase my knowledge acquired during my previous studies □.

The signer is responsible for the veracity of the data contained in this curriculum, committing to provide, where appropriate, the documentary evidences required.

London, July 2022

Sinuhé Perea-Puente ■.