# Curriculum Vitae: Paul Jonathan Sellin

**Professional Preparation**

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| University of Birmingham, UK | Physics | BS 1988 |
| University of Edinburgh, UK | Nuclear Physics | PhD 1992 |
| University of Sheffield, UK | Nuclear Physics | Postdoc 1993-1998 |

**Appointments**

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| 2010 – Present | Professor of Physics, Department of Physics, University of Surrey UK |
| 1998-2010 | Associate Professor (Lecture, Senior Lecturer, Reader) Department of Physics, University of Surrey UK |
| 1993-1997 | Research Associate in Particle Physics, University of Sheffield UK |
| 1992-1993 | Postdoctoral Research Fellow in Nuclear Physics, University of Edinburgh UK |
| 2019 – 2024 | Visiting Professor, Department of Physics, University of Wollongong, Australia. |
| 2015 – 2024 | Visiting Professor, Department of Medical Physics and Biomedical Engineering, University College London |

**Professional Activities**

Head of Department of Physics (Chairman), University of Surrey, 2010 - 2015.

Visiting Professor at the Department of Medical Physics and Biomedical Engineering, University College London, from 2015.

Visiting Professor at the Centre for Medical Physics, University of Wollongong, Australia, from 2015.

Chief Section Editor, “Frontiers in Detection Science and Instrumentation” journal, section on Detector Materials.

European Commission H2020 Monitor “LORIX” project 644103, 2016 – 2018.

**Conferences and Scientific Committees**

Deputy Chair of the RTSD Symposium, Manchester, November 2019.

Joint organiser of NSS/RTSD conference workshop “Organic Materials for Radiation Detection”, Atlanta, November 2017.

Member of the RTSD Scientific Committee.

Member of the “Position Sensitive Detectors Conference” Scientific Committee.

Member of the Science Steering Board for the Rutherford Appleton Laboratory Centre for Instrumentation.

William Penney Fellow at AWE Aldermaston, UK.

Selected Recent Conference Presentations:

- "Review of recent advances in perovskite radiation detectors" (invited), SORMA West, May 2021.
- "Nanocomposite perovskite radiation detectors" (invited), DTRA Basic Science annual review, Washington, September 2019.
- "Organic materials for radiation detection: 'From polymers to perovskites", short course lecture, NSS/RTSD Sydney, November 2018.
- "Spectroscopic performance of High-Z materials for synchrotron applications" (invited), IFDEPS Workshop, Annecy France, March 2018.
- "Status and prospects for organic radiation detectors" (invited), RTSD Symposium, Atlanta USA, October 2017.
- "Neutron detection with SiPM-based plastic scintillators", IAEA Nuclear Security conference, Vienna Austria, December 2016.

**Professional Affiliations**
Fellow of the Institute of Physics, and Chartered Physicist (CPhys)
Member of the Institute of Electrical and Electronic Engineers (IEEE).

**Research Interests:**

- Perovskite and organic materials for use as radiation sensors and organic electronics, including single crystal perovskites, nanoparticles, and perovskite scintillators.
- Characterisation of high-Z compound semiconductor materials (eg. GaAs, InP, CdTe, CdZnTe) for X-ray and nuclear medicine imaging detectors.
- New semiconductor materials for use in extreme conditions, (eg. diamond, silicon carbide, gallium nitride) where high dose rate and/or high temperature capability is required.

**Publications: Google scholar 7980 citations, h-index 44; >300 published works.**

**Selected recent publications:**

J. O'Neill, I. Braddock, C. Crean, J. Ghosh, M. Masteghin, S. Richards, M. Wilson, P. Sellin, *Development and characterisation of caesium lead halide perovskite nanocomposite scintillators for X-ray detection*, Frontiers in Physics 10 (2023) 1046589.

M. Xu, M. Zhu, D. Zhao, S. Chen, S. Liu, Q. Zhang, P. Yuan, B. Zhang, P. Sellin, W. Jie, Y. Xu, *Orientation and Mobility Control of 4HCB Organic Crystalline Film by Space-confined Method for Flexible X-ray Detectors with High Sensitivity*, Journal of Materials Science & Technology, **135** (2023) 46-53.

Joydip Ghosh, Joseph O'Neill, Mateus G. Masteghin, Isabel Braddock, Carol Crean, Robert Dorey, Hayden Salway, Miguel Anaya, Justin Reiss, Douglas Wolfe, and Paul Sellin, *Surfactant-Dependent Bulk Scale Mechanochemical Synthesis of CsPbBr3 Nanocrystals for Plastic Scintillator-Based X-ray Imaging*, ACS Applied Nanomaterials **6, 16** (2023) 14980-14990

Stephanie H. Bennett, Joydip Ghosh, Eric Gros-Daillon, Ferdinand Lédée, Javier Mayén Guillén, Jean-Marie Verilhac, Julien Zaccaro, Duck Young Chung, Vladislav Klepov, Mercouri G. Kanatzidis and Paul J. Sellin, *Charge transport comparison of FA, MA and Cs*

*lead halide perovskite single crystals for radiation detection*, Front. Detect. Sci. Technol 1:1249892.

J. Ghosh, S. Parveen, P.J. Sellin, P.K. Giri, *Recent Advances and Opportunities in Low-Dimensional Layered Perovskites for Emergent Applications beyond Photovoltaics*, Advanced Materials Technologies **8** (2023) 2300400.

J. O'Neill, S. Alghamdi, I. Braddock, J. Ghosh, P. Sellin, C. Crean, R. Mulholland, R. Dorey, J. Reiss, D. Wolfe, S. Richards, M. Wilson, M. Anaya and H. Salway, *Hydrothermal and Mechanosynthesis of Mixed-Cation Double Perovskite Scintillators for Radiation Detection*, Advanced Optical Materials (2023) 2301335

S. Alghamdi, S. Bennett, Carol Crean, J. Ghosh, H. Gibbard, R. Moss, J. Reiss, D. Wolfe, P. Sellin, *Polycrystalline Formamidinium Lead Bromide X-ray Detectors*, Applied Sciences **12** (2022) 2013 (1-11)

Joydip Ghosh, P.J. Sellin and P. K. Giri, Recent Advances in Lead-free Double Perovskites for X-ray and Photodetection, Nanotechnology **33** (2022) 312001

I. H. B. Braddock, M. Cheikh, J. Ghosh, R. E. Mulholland, J. G. O'Neill, V. Stolojan, C. Crean, S. J. Sweeney, P. J. Sellin, *Formamidinium Lead Halide Perovskite Nanocomposite Scintillators*, Nanomaterials **12** (2022) 2141

N. K. Tailor, J. Ghosh, M. A. Afroz, S. Bennett, M. Chatterjee, P. Sellin, S. Satapathi, *Self-Powered X-ray Detection and Imaging using Cs2AgBiCl6 Lead Free Double Perovskite Single Crystal*, ACS Applied Electronic Materials **4** (2022) 4530–4539

Yukta Yukta, J. Ghosh, M. Adil Afroz, S. Alghamdi, P.J. Sellin, S. Satapathi, *Efficient and Highly Stable X-ray Detection and Imaging using 2D $(BA)_2PbI_4$ Perovskite Single Crystals*, ACS Photonics **9** (2022) 3529-3539

B. Zhang, F. Wang, X. Liu, B. Xiao, M. Xu, Meng, S.T. Dong,Y. Xu, P. Sellin, W. Jie, *Ion Migration Controlled Stability in α-Particle Response of CsPbBr2.4Cl0.6 Detectors*, J. Phys Chem C 125 (2021) 4235-4242

X. Liu, M. Xu, Y. Hao, J. Fu, F. Wang, B. Zhang, S. Bennett, P. Sellin, W. Jie, Y. Xu, *Solution-grown Formamidinium Hybrid Perovskite (FAPbBr3) Single Crystals for α Particle and γ-ray Detection at Room Temperature*, ACS Applied Materials & Interfaces 13 (2021) 15383-15390

B. Xiao, F. Wang, M. Xu, X. Liu, Q. Sun, B. Zhang, W. Jie, P. Sellin, Y. Xu, *Melt-Grown Large-Sized $Cs_2TeI_6$ Crystals for X-Ray Detection*, Crystal Communication Engineering 22 (2020) 5130-5136.

D. Zhao, M. Xu, B. Xiao, B. Zhang, L. Yan, G. Zeng, A. Dubois, P. Sellin, W. Jie and Y. Xu, *Purely Organic Single Crystal Exhibiting High Hole Mobility for Direct Detection of Ultralow-Dose X-Radiation*, Journal of Materials Chemistry, **8** (2020) 5217-5226.

J. A. Posar, J. Davis, M. Large, L. Basiricò, A. Ciavatti, B. Fraboni, O. Dhez, D. Wilkinson, P. Sellin, M. J. Griffith, M. Lerch, A. Rosenfeld and M. Petasecca, *Characterization of an organic semiconductor diode for dosimetry in radiotherapy*, Medical Physics 47/8 (2020) 3658-3668.

Jessie A. Posar, Jeremy Davis, Owen Brace, Paul Sellin, Matthew J. Griffith, Olivier Dhez, Dean Wilkinson, Michael L. F. Lerch, Anatoly Rosenfeld & Marco Petasecca, *Characterization of a plastic dosimeter based on organic semiconductor photodiodes and scintillator*, Physics and Imaging in Radiation Oncology, in press May 2020.