Dr Francisco Suzuki-Vidal — Curriculum Vitae

Imperial College London
Plasma Physics Group

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Employment

- **Royal Society University Research Fellow (URF)** — Oct 2013 – Mar 2022
  Imperial College London
  - Independent funding for Laboratory Astrophysics research.

- **Research Associate** — Jul 2009 – Sep 2013
  Imperial College London
  - Experiments funded by EPSRC and the US Department of Energy

- **Research Assistant** — Nov 2005 – Jun 2009
  Imperial College London
  - Astrophysical jet experiments on the MAGPIE facility (EU JETSET project)

- **Research Assistant** — Sep 2004 – Sep 2005
  Pontificia Universidad Catolica de Chile
  - Magnetised plasma experiments on the *Llampudken* pulsed-power generator

Education

- **PhD in Plasma Physics (Awarded 30th June 2009)**
  University of London, Imperial College - Link to my PhD thesis
- **BSc in Physics (1st class, awarded 10th August 2004)**
  Optics and Plasma Group - Pontificia Universidad Catolica de Chile

Research Projects

- **Principal Investigator (2017−present):** Radiative shock experiments on the SG-II laser (China). Two separate campaigns in Sep/2018 and Sep/2019.
- **Principal Investigator (2013−2015):** Academic access experiments on the Orion laser, AWE (UK) (*"Counter-streaming radiative shocks on the Orion laser")*.
- **Participant (2019−present):** NLUF proposal (US) *"Driving compressed magnetic field to exceed 10 kT in cylindrical implosions on OMEGA"*. First day of experiments performed in Nov/2020.
- **Particpant (2020−2023):** I+D+i project *"Atomic kinetics and heating models for spatial and time simulations of the interaction of ion and/or radiation beams with high energy density plasmas"* (ULPGC, Spain).
- **Senior Investigator (2009−present):** MAGPIE pulsed-power facility, Imperial College London. Lead in magnetically-driven jet and radiatively cooled shocks from jet-ambient interaction experiments. Design of plasma diagnostics and data analysis.
- **Co-Investigator (2013−2015):** Experiments on the PALS laser (Czech Republic), funded by LaserLab Europe (*"Spectroscopic study of single and counter propagating radiative shocks")*.
- **Particpant (2017−2018):** EUROfusion project *"StarkZee: Towards a universal Stark-Zeeman code for spectroscopic diagnostics and for integration in transport codes"* (France, Spain, UK, Czech Republic, Poland).

Research Funding

- **Royal Society University Research Fellowship** Oct 2013−Mar 2022
  "Strong magnetised shocks" & *"Lab-astro experiments with rad. shocks and SNe"*
  - Research funding inc. salary, travel and consumables (£970,000)
- **Royal Society Research Fellows Enhancement Award (2017)** Oct 2017−Mar 2022
  "Laboratory astrophysics experiments to study supernova remnants"
  - Research funding for experiments and collaborations (£90,000)
- **Royal Society Research Fellows Enhancement Award (2018)** Oct 2018−Sep 2021
  "Laboratory astrophysics experiments with radiative shocks and Supernovas"
  - Research funding for post-doctoral researcher (£207,000)
- **Royal Society Research Grant** Oct 2018−Oct 2019
  "New studies of reverse radiative shocks at the ShengGuang-II laser facility in China"
  - High-precision engineering target manufacturing (£15,000)
- **Royal Society International Exchanges Scheme** Feb 2018−Dec 2019
  "Laboratory astrophysics experiments at the ShenGuang II high-power laser in China"
  - Bi-lateral research visits between UK and China (£6,000)
- **Imperial College European Partners Fund** Jul 2017 − Jun 2019
  "New laboratory astrophysics experiments relevant to Supernova explosions"
  - Funding for myself and three European collaborators for reciprocal visits (£4,400)
- **Royal Astronomical Society (RAS) grant** Nov 2017
  Bursary for Masters student project (£1,000, 6 weeks)
- **AWE technical development** Mar 2015
  Development of a gas-filling capability for laser experiments on the Orion laser (£9,000)
- **Royal Astronomical Society (RAS) grant** Jul 2014
  Bursary for UROP student under my supervision (£1,200, 8 weeks)
- **Marie Curie European Reintegration Grant** Oct 2009−Sep 2012
  "Re-creating the physics of astrophysical jets in laboratory experiments"
  - Own funding for research consumables (£36,000)

Awards

- **Award for Excellence in Teaching** 2014 − 2015
  Imperial College London
  - Faculty of Natural Sciences, 2014. Also voted best Year 2 lab. demonstrator in 2015.
- **Fusion Science Center Award** Aug 2007
  Excellence in poster presentation
  - Category of Laboratory Astrophysics, HEDP summer school, La Jolla, CA, USA.

Reviewing & Refereeing

- **Referee**: Nature Physics, Physics of Plasmas, High-Energy Density Physics, IEEE Trans. of Plasma Science, Astronomy & Astrophysics.
- **Reviewer:** NASA Astrophysics Research and Analysis Program panel, US. PALM - Physics: Atoms, Lights, Matter, France.

Management & Administrative Activities

- **Topical Editor:** High-Power Laser Science and Engineering journal, Cambridge University Press. Special issue on laboratory-astrophysics (Mar/2017−Dec/2018).
- **Commitees:** Local organising committee for IoP Plasma Group Conference in 2020 and 2014.
  Post-doctoral representative for plasma physics on the research associate committee in 2011.
- **Safety:** Responsible for all aspects of health and safety in the MAGPIE laboratory since 2010.
  Laser safety representative for the plasma group in 2011.
- **Group coordinator:** Responsible for the Undergraduate Research Opportunities Programme (UROP) in the plasma group (2014−2017). Organizer of postgraduate seminar series in the plasma group (2014−2017).
- **Memberships:** Member of the Institute of Physics (IoP), the American Physical Society (APS) and Fellow of the Royal Astronomical Society (RAS).

Teaching

- **Associate Fellow of the Higher Education Academy (HEA).** Awarded on 18/10/2017.
- **Consultant for Twig Education Ltd** - Reviewed a full module on 'Thermal energy' for 11−14 year old students (2020).
- **Research supervision** (all at Imperial College London)
  - **Postdoctoral**: Direct supervisor (S.R. Mirfayzi, 2020−2021), co-supervisor (C. Walsh, 2019−2020).
  - **PhD:** Direct supervisor (T. Clayson, 2014−2018) and co-supervisor (C. Garcia, 2015−2018).
  - **Master:** Co-supervisor of 8 students in 4 separate projects (2010−2014).
  - **Undergraduate:** Direct supervisor of 4 Summer UROP projects (2014, 2015, 2019, 2020).
- **Postgraduate lectures**
  - *High-Energy Density Laboratory Astrophysics*, Kudowa Summer School (1 hour, online, 2020).
  - *Fluid Basics*, plasma physics PG residential course (1 hour, Imperial, 2018).
  - *Astrophysical Jets*, plasma physics PG course (1 hours, Imperial, 2017−2020).
  - *Presentation Skills for PG Students* (1 hour, Imperial, 2016−2017).
  - *Z-pinches for Inertial Confinement Fusion* (1.5 hours, 2011, U. of York).
- **Undergraduate teaching**
  - **Head of Experiment** 2nd Year Lab *Electric and Thermal Waves* (Imperial, 2019−present).
    Lead coordinator of **Lab in a Box** remote experiment due to COVID-19 (2020−2021).
  - **Supervisor** of BSc projects (Imperial, 2018).
  - **Demonstrator and marker** in the MSc in Optics course laboratory (Imperial, 2016−2017).
  - **Demonstrator and marker** in Year 1 and Year 2 Physics laboratory (Imperial, 2006−2015).
  - **Teaching assistant** in theoretical and laboratory courses for physics and engineering (PUC-Chile, 2003−2005).

Outreach and STEM Activities

- **Judging panel for the 2019 Royal Society Young People's Book Prize:** This prize promotes the writing of excellent, accessible STEM books for under-14s and inspire young people to read about science.
- **Royal Society Summer Science Exhibition:** Co-lead in exhibit *"How to Make a Supernova"* (2017) joint with U. of Oxford and AWE Plc. Exhibitor at the 2014 *"Set your controls for the heart of the Sun"*.
- Involved in the **Physics Open Day at Lycee Francais Charles De Gaulle**, visits from the **International Association of Physics Students (IAPS)**, **the Juno Open Day**, Imperial College Physics Department **Work Experience Programme** and Science and Engineering Open Day.