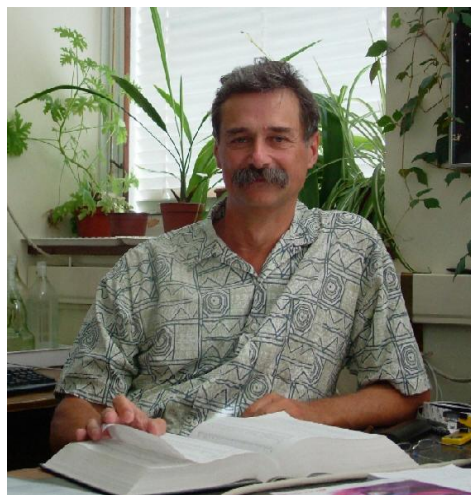


Curriculum Vitae



A. Personal details

Name: Leszek J Frasiński, *MSc, PhD, FInstP*
Present appointment: Professor of Atomic and Molecular Physics
Date of birth: 30 November 1952
Nationality: British and Polish
Work address: Blackett Laboratory, Imperial College London, London SW7 2AZ, UK
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Home: 6 Campbell Road, Woodley, Reading RG5 3NA
Tel. +44 118 969 0372
Marital status: Married with two grown up children

Education and qualifications obtained

1977–80 PhD in Atomic Physics (First Class), Jagellonian University, Kraków, Poland
1978–80 First Certificate in English, Krakow, extramural from University of Cambridge
1971–76 MSc in Physics, (First Class and The Niewodniczanski Prize for the best thesis), Jagellonian University, Kraków, Poland
1971 First Prize in National Astronomical Olympiad and unconditional entry to any university science course in Poland
1967–71 Secondary School, Gliwice, Poland

Current and previous appointments

2008– Professor, Department of Physics, Imperial College London
2006–08 Professor, Department of Physics, University of Reading
1995–06 Reader, _____
1984–95 Lecturer, _____
1981–84 Research Assistant, _____
1980–81 Lecturer, Institute of Physics, Jagellonian University, Kraków, Poland
1976–77 Research Assistant, _____

B. Research and scholarship

1. Research in external laboratories

- 2009– Molecular dynamics driven by free-electron lasers, LCLS at Stanford California and FLASH at Hamburg, Germany (6 experimental runs)
- 2004– Development of attosecond technology, Imperial College, London (close collaboration through regular meetings and joint experimental runs a few times a year, utilising unique apparatus constructed at Reading)
- 2002–08 Attosecond pulse generation, FOM Institute in Amsterdam (2 experimental runs, 2 weeks each), Lund in Sweden (one week visit) and Saclay near Paris (5 experimental runs, 2 weeks each, plus 2 one-day discussion meetings)
- 1986–99 Multiple ionisation of molecules with intense lasers, using the unique covariance mapping apparatus constructed at Reading, mainly at the Rutherford Appleton Laboratory (typically 8 weeks in a year of experimental runs), but also in Saclay near Paris (one 3-week run) and Lund in Sweden (one 2-week run)
- 1983–86 Synchrotron radiation studies of molecules at the Daresbury Laboratory using novel, triple-coincidence apparatus constructed at Reading (time split equally between Reading and Daresbury)

2. Research grant details

(Key: PI = Principal Investigator, CI = Co-Investigator)

a. Research Council funding

- PI 2011–12 £20k “Covariance mapping for research with free-electron lasers” (funded by EPSRC Bridging the Gaps scheme)
- CI 2011–17 £5.8M “Attosecond Electron Dynamics in Molecular and Condensed Phase Systems” (EPSRC Programme Grant, 1 PI and 8 CIs within Imperial College London)
- CI 2008–12 £144k “Next Generation Attosecond Technology” (Four institutions share £1M, mainly for Post-Doc salaries, funded by EPSRC)
- PI 2006–09 £201k “Dynamic Imaging of Matter on Attosecond and Ångström Scales” (equipment, 1-year Post-Doc, Research Student, 4-months technician, funded by EPSRC)
- PI 2004–08 £680k “Attosecond Light Source” (equipment, 4-year Post-Doc, Research Student, 24-months technician, funded by EPSRC Basic Technology)
- PI 1996–99 £148k “Manipulating the dissociation dynamics of simple molecules” (equipment, 3-year Post-Doc, 5.5-months technician, funded by EPSRC)
- CI 1993–96 £145k “Multielectron dissociative ionization – an unexplained phenomenon” (equipment, 3-year Post-Doc, 11-months technician, funded by SERC)
- CI 1990–93 £164k “The Coulomb explosion of molecules in intense laser fields” (equipment, 3-year Post-Doc, funded by SERC)
- CI 1988–91 £64k “Covariance mapping – a novel time of flight technique” (equipment, 1-year Post-Doc, 3-months Visiting Researcher, funded by SERC)
- CI 1988 £41k “Femtosecond dynamics of multielectron dissociative ionization” (equipment funded by SERC)

b. HEFCE funding

- PI 2003–05 £800k “Ultrafast Laser Laboratory” (refurbishment and equipment funded by the Science Research Investment Fund – I play the leading role in establishing this Laboratory)

3. Research students

a. Supervised

2008–12	PhD	Richard Squibb, funded by EPSRC via DTA scheme
2006–09	PhD	Caius Freeman, funded by the “Dynamic Imaging” grant
2005–09	PhD	Gavin Waters, funded by Physics Dept for the Ultrafast Laser Lab
2004–08	PhD	Justin Steele-Davies, funded by the “Attosecond Light Source” grant
2000–04	PhD	Charles Courtney, EPSRC studentship
1998–00	MSc	Major Chahal, MSc by Research
1997–01	PhD	Jonathan Plumridge, CASE EPSRC studentship
1994–97	PhD	Mark Thompson, SERC studentship

b. Co-supervised

2009–	PhD	Christopher Hutchison, funded by EPSRC via DTA scheme
1990–94	PhD	Gill Cross, Dr Codling’s student
1984–88	PhD	Paul Hatherly, Dr Codling’s student
1983–85	PhD	Kevin Randall, Dr Codling’s student
1981–83	PhD	Andy Ashman, Dr Tinker’s student

Note: Although I was not the official supervisor of these students I had the major influence on the direction of their research and helped them on a day to day basis.

c. Examined

Nov 2010	PhD	Manuel Succo, Imperial College London
Dec 2004	PhD	Eva Heesel, Imperial College London
Oct 1999	PhD	James Colgan, Queen’s University of Belfast

d. Monitored internally

1994–97	PhD	Alison Fairhurst, Reading
1994–97	PhD	Hassan Ibrahim, Reading
1994–97	PhD	Mamoun Naim, Reading

4. Overseas visitors

Year	Name	From	Project title
2006–07	Dr M Stankiewicz	Poland	“Dynamic Imaging”
2003–06	Dr M Stankiewicz	Poland	“Attosecond technology”
1996–99	Dr J Posthumus	Netherlands	“Field ionisation of molecules”
1993	Dr L Zhang	China	“Expansion of the focal volume in laser ionisation”
1992	Dr H Shiromaru	Japan	“Interferometric shaping of laser pulses”
1992	Dr M Brewczyk	Poland	“Thomas-Fermi-Dirac-Weizsäcker model of atoms”
1991–92	Dr M Stankiewicz	Poland	“Electron-electron covariance mapping”
1989	Dr M Brewczyk	Poland	“Thomas-Fermi-Dirac model of nitrogen molecules”

5. Research outputs

74 publications in refereed journals (with 37 citations per publication on average and h-index = 29),
61 conference proceedings,
51 invited talks,
8 conference sessions chaired, and
127 manuscripts refereed.
(see a separate list for details)

C. Teaching

1. Significant developments

a. Applications of Quantum Mechanics

2008–13 I have completely rewritten and restructured this lecture course for 200+ physics undergraduates in their second year and supported it by classworks and problem sheets.

b. Undergraduate laboratories

2008– Head of Experiment , Year 2 Physics Laboratory

1985–08 Experimental Physics, Year 2

1991–02 Computing Laboratory, Year 1, later Year 2

1991–99 Electronics Laboratory, Year 2

A major effort has been put into the design and implementation of practical projects in these laboratories. I have driven the modernisation of the projects and the system of work several times to keep pace with the progress in technology. Detailed laboratory manuals have been written, updated every year and distributed to the students.

c. Observational Astronomy

2000–08 I developed an innovative course to support the degree in “Physics and the Universe”. I implemented practical observations through telescopes in the evenings and video recordings about space exploration.

d. Modern Spectroscopic Techniques

2000–08 This advanced, Final Year course reflected the recent progress in my research area.

e. Computer-enhanced learning

Web-based software (Blackboard) is routinely used to enhance all courses.

2. Teaching load

a. Contact hours in timetabled teaching

a wide range of undergraduate courses, averaging 9 hours per week in term time in the last 10 years

b. Other teaching

78 Personal Tutees since 1985

64 Academic Tutees since 2009

1–3 Final-Year Projects every year

D. Knowledge transfer, enterprise and outreach

1. Interaction with business

a. High-tech companies

A substantial part of the grant funding I have secured is for state-of-the-art scientific equipment. The research outlined above provides a significant driving force for development of high-tech businesses in the UK and Europe.

b. Attosecond Basic Technology

This grant is specifically for development of ultrafast, advanced technology in the UK. The research programme involves several leading UK centres that provide their expertise in fundamental physics, measurement techniques and laser technology. These are: Imperial College London, University of Birmingham, University College London, University of Newcastle, University of Oxford, University of Reading and Rutherford Appleton Laboratory.

c. Ultrafast Laser Laboratory

The development of this interdisciplinary research laboratory in Reading has received interest outside the University. There are specific projects to study metrology in collaboration with the National Physical Laboratory, biotechnology with Syngenta, tissue irradiation with the Royal Berkshire Hospital and breaking kidney stones with the Great Western Hospital in Swindon.

d. 4th-Generation Light Source (4GLS)

This proposal was the next technological step after “Diamond”, the 3rd generation synchrotron radiation source recently built at the Rutherford Appleton Laboratory. Recognizing my expertise in this area the 4GLS Steering Committee has asked me to advise on the scientific core of this project.

2. Popularisation of science in the wider community

Being aware of the need to bring the frontiers of scientific understanding to lay people, I feel obliged to provide authoritative information. The examples include:

- 9 Dec 2003 An interview by *T3* magazine on dangers of lasers
- 10 Sep 2003 An interview by the *BBC* on discovery of magnetism
- 17 Dec 2001 “Models of lasers” – two lessons in Maiden Erlegh School, Reading
- 18 Jan 2001 A live TV interview Channel 4 *Big Breakfast* to explain an appearance of a UFO above Reading (it was the planet Venus)
- 31 May 1996 A live radio interview for *Thames Valley FM*, *BBC* on the Bermuda Triangle (fundamental physics is far more mysterious)
- 1996–2003 *Science Line* – over 50 questions about everyday phenomena answered by email
- 1994–98 Member of Neighbourhood Engineers, organising “egg-race” competitions in a local school
- 6 June 1993 An explanation of a physics puzzle: “Bees on the line fail to halt BR” *The Sunday Times*, *News Review* p 2.6

E. Administration and other activities

1. Special responsibilities

- 2009– European: User Representative of LASERLAB for the UK
- 2003– International: Member of the COAST Project on Ultrafast Intense Laser Science linking research groups from Canada, France, Germany, Italy, Japan, UK, and US.
- 2008–10 National: Member of the Access Panel to the Central Laser Facility at the Rutherford Appleton Laboratory
- 2003–08 At the University of Reading: Director of the Ultrafast Laser Laboratory
- 2001–07 National: Advice on innovative science to the Steering Committee of the 4GLS

2. Administrative duties

a. Safety

- 2003–2008 School Laser Supervisor
- 1995–2003 Departmental Laser Supervisor

b. Recruitment

- 1995–08 Regular UCAS interviews and participation in Open Days
- 2001–03 Designing and implementing a physics quiz for scholarship candidates

c. Teaching

- 2008– Organiser of post-graduate lecture course on Light-Matter Interactions
- 1998–08 Area Project Coordinator (Final Year projects)

d. Governance

- 2006–08 Member of School Council (School of Mathematics, Meteorology & Physics)

3. Other information

a. Membership of professional bodies

- 2003– Fellow of the Institute of Physics

b. Other qualifications

- 1998– Qualified Minibus Driver
- 1998–01 First Aid

c. Unusual skills

I can speak and read Russian, blow glass, operate a lathe and make mirrors for astronomical telescopes.

d. Leisure activities

- Cycling I find cycling the most convenient and relaxing way to move around the town.
- DIY I maintain and repair of all domestic appliances, consumer electronics, the car and the motorbike. I like gardening, including pruning trees and chopping firewood.
- Walking I enjoy walking in remote places. I climbed Zugspitze and Mt Fuji, trekked in rural India and camped in Canadian Rockies.
- Skiing All members of our family are good skiers.
- Paragliding Ten years ago my wife and I took up paragliding. We enjoy learning meteorology and air navigation when flying from local hills.
- Sailing For holidays we often hire a yacht. I am qualified Day Skipper and VHF Radio Operator.