

Dr. Ian Robinson

Curriculum Vitae



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schoolphysicsprojects.org

DOCTORAL RESEARCH

Computational Studies of Hydrogen in Palladium

Following a masters project developing computational simulations of novel superconductors I modelled crystallisation of hydrogen isotopes diffusing through palladium. Producing ab-initio computer models exploring the odd effect whereby heavier isotopes diffuse faster and studying the short-range ordering of this unusual lattice gas.

POST DOC RESEARCH

Part-time I am working on the ab-initio generation of diffraction patterns from atomistic models and also applications of infrasound detection.

EMPLOYMENT

Prior Pursglove College
Teacher of Physics & Engineering

CURRENT, FROM FEB 2007 (FT)

Until re-organisation in 2012 Assistant Manager, Science

JAN 1996 – FEB 2007 (FT)

Blackburn College
Head of A-level Physics and Computing

JUL 1992 – DEC 1995 (FT)

St. Albans RC High School, Manchester
Teacher of Physics

SEP 99 – JUNE 03 (PT)

The Open University
Tutor - Computing

JUN 01 – JAN 04 (PT)

A.E.B.
Coursework Moderator & Senior Examiner, A-Level Computing

JAN 04 – AUG 07 (PT)

O.C.R.
Coursework Moderator & Senior Examiner, A-level Physics

EDUCATION

2015 **Doctor of Philosophy**
Computational Physics
Institute of Materials / University of Salford

1995 **Master of Science**
Computational Physics
University of Salford

1992 **P.G.C.E. Physics**
The University of Manchester

WORK EXPERIENCES

A-level Physics

I have predominantly been teaching A-level Physics since 2000 along with some private tuition. Boards include OCR-B (Advancing Physics), OCR-A, Nuffield & AQA, being instrumental in at least 3 major lab refits.

Vocational Science

For the last few years I have delivered L3 Applied Physics. Additionally I have taught L2 & L3 GNVQ Science and delivered science components of various vocational BTECs including Health & Social Care, Complementary Therapy and Hair & Beauty.

BTEC L3 Engineering

For a couple of years I have been delivering L3 Engineering as an alternative to A-Level Physics. This has the potential to be a valuable course for higher level apprenticeships.

Computer Science

At Blackburn I was responsible for A-level Computing as well as Physics. At both Blackburn and Prior I developed enrichment courses in *scientific* computing and advanced mathematical document typesetting using \LaTeX .

Science Enrichment

At both Blackburn and Prior I developed an extensive range of science enrichment courses combining electronics, computing and physics. These included the designing and building solar-wind, solar-flare and lightning detectors. These were carried out with A-level students and pupils at two local secondary schools. At Prior I arranged hosting a HiSPARC cosmic ray detector and installed a seismometer. Other recent work includes delivering science courses to scouts and embedded computers/electronics at a local primary.

RECENT SIGNIFICANT PROJECTS

- | | |
|---------|--|
| PRESENT | see schoolphysicsprojects.org |
| 2022- | awarded by Czech Society of Physics |
| 2018- | development of school solar flare detector |
| 2017- | development of school infrasound monitor |
| 2017- | developing school nuclear resonance spectrometer |
| 2017- | developing archaeological gradiometer |
| 2016- | development of school aurora monitor |
| 2016-18 | Makerfaire, Newcastle
public display of various school physics projects |

1986 **Bachelor of Physics**
The University of Aston

1982 **9 O, 4 A Levels**
Bury Grammar School

COMPUTING SKILLS

Fortran, Python, L^AT_EX, Linux, Assembly, Haskell,
Pascal, (V)Basic, SQL, Prolog, Modula, C,
HTML, CSS, Raspberry Pi, Arduino.
Complex Programmable Logic - VHDL
Developing networked embedded projects.

LINKS

YouTube – <https://bit.ly/2mmxN89>
Projects – <https://bit.ly/2RC2c4q>
Github – <https://github.com/starfishprime101>
Orcid – <https://orcid.org/0000-0002-3663-2873>

2014 Int. Symp. on Metal-Hydrogen Systems
2012-16 various I.O.P. public outreach events

PUBLICATIONS

Digital Infrasound monitor—a novel school geophysics project.

Physics education v55, n5,
2020 doi:10.1088/1361-6552/ab9e9d

Solar wind monitor—a school geophysics project.

Physics education v53, n3,
2018 doi:10.1088/1361-6552/aaacb2

Computational Studies of Hydrogen in Palladium.

University of Salford Institutional Repository,
2016 <http://usir.salford.ac.uk/id/eprint/45237>

REFERENCES

available on request

Updated May 2022