



Professor Robert Evans

B.Sc.(Birm.), Ph.D.(Bristol), F.Inst.P., FRS

Emeritus Professor

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Summary

My research lies in the field of statistical physics and, in particular, the area of liquid state theory. Current interests include: i) fluid interfacial phenomena, especially the physics of adsorption, with emphasis on fluid phase transitions and criticality at surfaces, and the nature of correlation functions. ii) fluids under nano and mesoscale confinement. iii) theory of nucleation. iv) deriving and applying simple models of colloidal suspensions. I am also interested in the formal links between classical and quantum density functional theory (DFT), a technique that forms a cornerstone of many body physics.

Biography

Date of Birth: April 7, 1946. **Nationality:** U.K.

Degrees: BSc Mathematical Physics, University of Birmingham, UK (1967)

PhD Theoretical Physics, University of Bristol, UK (1970)

Career:

1970-3 Postdoctoral Research Assistant, University of Bristol, UK

1973-4 Royal Society/SRC European Research Fellow, Freie Universität West Berlin

1974-7 Postdoctoral Research Assistant, University of Bristol

1977-8 SRC Advanced Research Fellow, University of Bristol

1978-84 Lecturer, University of Bristol

1984-92 Reader in Physics, University of Bristol

1992-2006 Professor of Physics, University of Bristol

1997 Research Professor, Bergische Universität, Wuppertal, Germany

2002-5 Humboldt Awardee, MPI für Metallforschung, Stuttgart, Germany

2006-11 Henry Overton Wills Professor and Head of Department, University of Bristol

2011 Kramers Chair of Theoretical Physics, University of Utrecht, Netherlands

2011- Emeritus Professor and Senior Research Fellow, University of Bristol

Distinctions and Awards:

1981 Elected Fellow of the Institute of Physics

2002 Alexander von Humboldt Research Award (Humboldt Preis)

2002 Molecular Physics Lecturer (Taylor & Francis)
2005 Elected Fellow of the Royal Society of London
2007 Lennard-Jones Prize and Lecturer (Royal Society of Chemistry)
2011-3 Leverhulme Emeritus Fellowship
2011 Kramers Professorship, University of Utrecht
2014 European Physical Society Liquid Matter Prize
2016-8 Leverhulme Emeritus Fellowship

Teaching

Professor Evans does not teach at present.

Keywords

- statistical physics
- condensed matter theory.

Memberships

Organisations

[Interface Analysis Centre](#)

[School of Physics](#)

Research areas

- [Light and Matter: Physics at the Interface](#)

Research groups

- [Theory Group](#)

Recent publications

- Evans, R, Stewart, M & Wilding, N, 2019, '[A unified description of hydrophilic and superhydrophobic surfaces in terms of the wetting and drying transitions of liquids](#)'. *Proceedings of the National Academy of Sciences of the United States of America*.
- Stopper, D, Hansen-Goos, H, Roth, R & Evans, R, 2019, '[On the decay of the pair correlation function and the line of vanishing excess isothermal compressibility in simple fluids](#)'. *Journal of Chemical Physics*, vol 151.
- Evans, R, Frenkel, D & Dijkstra, M, 2019, '[From simple liquids to colloids and soft matter](#)'. *Physics Today*, vol 72., pp. 38-39
- Zhang, I, Pinchaipat, R, Wilding, NB, Faers, MA, Bartlett, P, Evans, R & Royall, C, 2018, '[Composition inversion in mixtures of binary colloids and polymer](#)'. *Journal of Chemical Physics*, vol 148.
- Walters, MC, Subramanian, P, Archer, AJ & Evans, R, 2018, '[Structural crossover in a model fluid exhibiting two length scales: Repercussions for quasicrystal formation](#)'. *Physical Review E*, vol 98.
- Evans, R, Galindo, A, Jackson, G, Lynden-Bell, R & Rotenberg, B, 2018, '[Daan Frenkel — An entropic career](#)'. *Molecular Physics*, vol 116., pp. 2737-2741
- Evans, R, Stewart, MC & Wilding, NB, 2017, '[Drying and wetting transitions of a Lennard-Jones fluid: Simulations and density functional theory](#)'. *Journal of Chemical Physics*, vol 147.
- Archer, AJ, Chacko, B & Evans, R, 2017, '[The standard mean-field treatment of inter-particle attraction in classical DFT is better than one might expect](#)'. *Journal of Chemical Physics*, vol 147.
- Chacko, B, Evans, R & Archer, AJ, 2017, '[Solvent fluctuations around solvophobic, solvophilic and patchy nanostructures and the accompanying solvent mediated interactions](#)'. *Journal of Chemical Physics*, vol 146.
- Evans, R, Oettel, M, Roth, R & Kahl, G, 2016, '[New developments in classical density functional theory](#)'. *Journal of Physics Condensed Matter*, vol 28., pp. 1-6

[View complete publications list](#) in the University of Bristol publications system

Courses

Professor Evans currently teaches 1 courses: