Christopher Patrick (Paddy) Royall
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Employment

2021-	UMR Gulliver, ESPCI Paris	**CNRS Director of Research 2**
2018-21	University of Bristol, UK	**Professor of Chemical Physics**.
2016-7 2015-	Kyoto University, Japan	Sabbatical Reader (Associate Professor).
2009-	University of Bristol, UK	Permanent appointment to Lecturer
2007-2015		**Royal Society University Research Fellow (URF)** 8 year career acceleration award (most prestigious in UK)
2004-2006	The University of Tokyo, Japan	**Japan Society for the Promotion of Science fellow**, with Prof Hajime Tanaka.
2002-2004	University of Utrecht, Netherlands	**Postdoctoral fellow**, with Prof Alfons van Blaaderen. Phase behaviour of colloids.
2001-2	UBS Warburg, London	Investment Banking**.** Marketing/development.

Education

1997-2001	University of Cambridge, (St Catharine's College)	**PhD in Physics,** with Prof Athene Donald, Polymers and Colloids Group. Graduated 12th May 2001.
1996-7	Gap Year	Long-distance sailing trip, England to the Caribbean.
1992-6	University of Edinburgh	**BSc in Physics,** 1st class hons, graduated 10th July 1996

Publications. 133 publications, h-index 43. 7500 citations (Google Scholar). *Highlights:*

"*Complex Plasmas and Colloidal Dispersions: Particle-resolved Studies of Classical Liquids and Solids*", Ivlev A, Loewen, H, Morfill G and Royall CP. World Scientific. (2012).

Zampetaki A, Yang, Y, Loewen, H and Royall CP "Dynamical Order and Many-Body Correlations in Zebrafish show that Three is a Crowd", *Nature Commun,* **15** 2591 (2024).

Mauleon-Amieva A, Allen MP, Liverpool TB and Royall CP, "Dynamics and Interactions of Quincke Roller Clusters: from Orbits and Flips to Excited States", *Sci. Adv.* **9** eadf5144 (2023).

Ortlieb L, Ingebrigtsen TS, Hallett JE, Turci F and Royall CP "Probing excitations and cooperatively rearranging regions in deeply supercooled liquids ", *Nature Commun.* **14** 2621 (2023).

Ferreiro-Córdova C, Royall CP, van Duijneveldt JS, "Anisotropic viscoelastic phase separation in polydisperse hard rods: non-sticky gelation", *Proc. Nat. Acad. Sci.* **117** 3415 (2020).

Hallett JE, Turci F and Royall CP, "Local structure in deeply supercooled liquids exhibits growing lengthscales and dynamical correlations", *Nature Comms,* **9** 3272 (2018).

Williams I, Oguz EC, Speck T, Bartlett P, Loewen H and Royall CP "Transmission of torque at the nanoscale", *Nature Physics* **12** 98–103 (2016).

Royall CP, Williams SR, Ohtsuka, T and Tanaka H, "Direct observation of a local structural mechanism for dynamic arrest", *Nature Materials* **7**, 556-561, (2008).

Leunissen ME, Christova CG, Hyninnen A-P, Royall CP, Campbell AI, Imhof A, Dijkstra M, van Roij R and van Blaaderen A, "Ionic colloidal crystals of oppositely charged particles", *Nature* **437**, 235 (2005).

Partnerships with Industry

- Funding for 3 PhD students from Bayer Cropscience. Publications in *Soft Matter* in 2013, 2017, 2018, 2019, *J. Chem. Phys.* 2018, 2021, *J. Phys: Condens. Matter* 2021.
- Collaboration with Kodak UK in Cambridge, developing principles underlying novel display technologies, resulting in publication in *J. Chem. Phys*. in 2009.
- Imaging of colloidal systems with ICI-Crosfield Group, Warrington, UK, 1997-2001.

Guest Editing: *J. Chem. Phys.* Special Issue on *Slow Dynamics* (2022).
J. Stat. Mech.: Theory and Experiment. Special Issue *Unifying Concepts in Glass Physics VII* (2019).
J. Stat. Mech.: Theory and Experiment. Special Issue on *Structure in Glassy and Jammed Systems* (2016).

Organisation of conferences, workshops and symposia

- "Soft and Liquid Matter Physics: the Long View", University of Tokyo, 10-14th March 2025. 100 participants.
- Workshop "Biological Metamaterials", Lorentz Center, Leiden University, Netherlands, May 2022. 40 participants.
- "AI/ML in formulation design – Opportunities and Challenges", Society for Chemical Industry, London, Nov 23rd 2021. 80 Participants.
- "Unifying Concepts in Glass Physics VII". June 2018. Lead organiser. 120 Participants. Bristol, UK.
- Centre Européen de Calcul Atomique et Moléculaire (CECAM) flagship meeting "The role of local structure in dynamical arrest", 50 Participants. Jul 2015, Mainz, Germany.
- "Arrested gels: structure and dynamics", 100 participants. March 2015. Cambridge.

  "Physics of Structural and Dynamical Hierarchy in Soft Matter", March 2015. International organizer. 200 participants. Tokyo.

  CECAM international meeting "The role of interfaces in crystallisation", May 2013, 50 Participants. Lausanne, Switzerland.
- CECAM international meeting entitled "Crystallisation: from colloids to pharmaceuticals". July 2010. 50 participants.

Promotion of Soft Matter Research

Promotion of Soft Matter Research: Press Releases

"Superior Covid protection from better face masks, research shows" www.bristol.ac.uk/news/2022/march/facemasks-study.html

"Is glass a true solid?" www.bristol.ac.uk/news/2015/january/glass-a-true-solid.html

"Squeezing in the microdomain" www.bristol.ac.uk/news/2013/9822.html

"A new way of making glass" www.bris.ac.uk/news/2012/8866.html

"A breakthrough in glass" www.bristol.ac.uk/news/2008/212017945385.html"

Publication list

133 publications, h-index 43. 7500 citations (Google Scholar).

Preprints and submitted

Royall CP, Charbonneau P, Dijkstra M, Russo J, Smallenburg F, Speck T and Valeriani C. "Colloidal Hard Spheres: Triumphs, Challenges and Mysteries", *ArXiV* 2305.02452 (2023).

Mauleon-Amieva A, Liverpool TB, Williams IP, Souslov A, Royall CP, "Complex flow profiles in microscopic active crystals", *ArXiV* 2311.04288 (2023).

Authored Book

"*Complex Plasmas and Colloidal Dispersions: Particle-resolved Studies of Classical Liquids and Solids*", Ivlev A, Loewen, H, Morfill G and Royall CP. World Scientific. (2012).

Review Articles (refereed)

[133] Dauchot O and Ladieu F and Royall CP "The glass transition in molecules, colloids and grains: universality and specificity", *Comptes. Rendus. de Physique* 1-22 (2023).

[132] Araújo NAM, Janssen LMC, Barois T, Boffetta G, Cohen I, Corbetta A, Dauchot O, Dijkstra M, Durham WM, Dussutour A, Garnier S, Gelderblom H, Golestanian R, Isa L, Koenderink GH, Löwen H, Metzler R, Polin M, Royall CP, Šarić A, Sengupta A, Sykes C, Trianni V, Tuval I, Vogel N, Yeomans JM, Zuriguel I, Marin A and Volpe G "Steering self-organisation through confinement", *Soft Matter* **19** 1695-1704 (2023).

[131] Royall CP, Faers MA, Fussell SL and Hallett JE, "Real Space Analysis of Colloidal Gels: Triumphs, Challenges and Future Directions", *J. Phys.: Condens. Matter,* **33** 453002 (2021).

[130] Royall CP, Turci F and Speck T "Dynamical phase transitions and their relation to structural and thermodynamic aspects of glass physics", *J. Chem. Phys.* (*invited perspective*) **153** 090901 (2020).

[129] Royall CP, Turci F, Russo J, Tatsumi S and Robinson JFE, "The race to the bottom: approaching the ideal glass?", *Topical Review* (invited), *J. Phys.: Condens. Matter* **30** 363001 (2018).

[128] Royall CP, "Hunting Mermaids in Real Space: Known Knowns, Known Unknowns and Unknown Unknowns", *Soft Matter* **14** 4009-4016 (2018).

[127] Royall CP and Williams SR "The role of structure in dynamical arrest", *Phys. Rep.* **560** 1-75 (2015).

[126] Royall CP, Poon WCK, and Weeks ER, "In search of colloidal hard spheres", *Soft Matter* **9** 17 - 27 (2013).

[125] Poon WCKP, Weeks ER and Royall CP, "On measuring colloidal volume fractions", *Soft Matter* **8** 21-30 (2012).

[124] Donald AM, He CB, Royall CP, Sferrazza M, Stelmashenko NA and Thiel BL, "Applications of environmental scanning electron microscopy to colloidal aggregation and film formation", *Colloid Surface A* **174** (1-2): 37-53 (2000).

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Chapters in Edited Books

[123] Meissner MF, Seddon AM and Royall CP, "Colloidal Microfluidics", in "Frontiers of Nanoscience", Elsevier 2019.

[122] Royall CP, Malins A, Dunleavy AJ, Pinney R "Geometric frustration is strong in model fragile glassformers", in "Fragility of Glassforming Liquids", Eds : Greer AL, Kelton KF and Sastry S. Hindustan Book Agency, New Delhi, India 2014.

Academic Journal Papers

[121] Zampetaki A, Yang, Y, Loewen, H and Royall CP "Dynamical Order and Many-Body Correlations in Zebrafish show that Three is a Crowd", *Nature Commun,* **15** 2591 (2024).

[120] Thijssen, K, Liverpool TB, Royall CP, Jack RL, "Necking and failure of a colloidal gel arm: signatures of yielding on different length scales", *Soft Matter* **19** 7412-7428 (2023).

[119**]** Kloucek MB, Machon T, Kajimura S, Royall CP, Masuda N, and Turci F "Biases in inverse Ising estimates of near-critical behavior" *Phys. Rev. E* **108** 014109 (2023).

[118**]** Schwarzendahl FJ, Mauleon-Amieva A, Royall CP, Löwen H, "Stability of interlocked self-propelled dumbbell clusters", *Phys. Rev. E* **107** 054606 (2023).

[117] Mauleon-Amieva A, Allen MP, Liverpool TB and Royall CP, "Dynamics and Interactions of Quincke Roller Clusters: from Orbits and Flips to Excited States", *Sci. Adv.* **9** eadf5144 (2023).

[116**]** Ortlieb L, Ingebrigtsen TS, Hallett JE, Turci F and Royall CP "Probing excitations and cooperatively rearranging regions in deeply supercooled liquids ", *Nature Commun.* **14** 2621 (2023).

[115] Gispen W, Coli GM.,van Damme R, Royall CP and Dijkstra M "Crystal polymorph selection mechanism of hard spheres hidden in the fluid" *ACS Nano* **17** 8807–8814 (2023).

[114] Leoni F, Martelli F, Royall CP, Russo J "Structural signatures of ultrastability in a deposited glassformer", *Phys. Rev. Lett.* **130** 198201 (2023).

[113] Moore FJ, Russo J, Liverpool TB and Royall CP "Active Brownian Particles in Random and Porous Environments", *J. Chem. Phys.* **158** 104907 (2023).

[112] Fussell SL, Royall CP, van Duijneveldt JS, "Controlling Kinetic Pathways in Demixing Microgel–Micelle Mixtures", *Langmuir*, **39** 1010-1018 (2023).

[111] Luo C, Robinson JF, Pihlajamaa I, Debets VE, Royall CP, and Janssen LMC "Many-Body Correlations Are Non-negligible in Both Fragile and Strong Glassformers", *Phys. Rev. Lett.* **129** 145501 (2022).

[110] Dong J, Turci F, Jack RL, Faers MA and Royall CP, "Direct Imaging of Contacts and Forces in Colloidal Gels" *J. Chem. Phys.* **156** 214907 (2022).

[109] Williams I, Oğuz EC, Löwen H, Poon WCK and Royall CP, "The rheology of confined colloidal hard discs" *J. Chem. Phys.* **156** 184902 (2022).

Academic Journal Papers (continued)

[108] Ríos de Anda I, Wilkins JW, Robinson JF, Royall CP and Sear RP, "Modelling the filtration efficiency of a woven fabric: The role of multiple lengthscales", *Phys. Fluids*. **34** 033301 (2022).
PoF focus: https://publishing.aip.org/publications/latest-content/cloth-masks-inferior-for-protection-against-airborne-viral-spread/

[107] Robinson JF, Ríos de Anda I, Moore FJ, Gregson FKA, Reid JP, Husain L, Sear RP and Royall CP, "How effective are face coverings in reducing transmission of COVID-19?", *Aerosol Sci. Tech.* **56** 473–487 (2022).

[106] Temperature-controlled fluid-fluid phase separation in microgel - polymeric micelle mixtures Fussell SL, Royall CP and van Duijneveldt JS, *J. Coll. Interf. Sci*. **606** 953-960 (2022).

[105] Yang Y, Turci F, Kague E, Hammond CL, Russo J and Royall CP "Dominating Lengthscales of Zebrafish Collective Behaviour", *PLOS Comp. Biol.* **18** e1009394 (2022).

[104] Carter BMGD, Royall CP, Dyre JC and Ingebrigtsen TS, "Isomorphs in nanoconfined liquids", *Soft Matter* **17** 8662 2021.

[103] Moore FJ, Royall CP, Liverpool TB and Russo J, "Crystallisation and polymorph selection in active Brownian particles" *Eur. Phys. J. E*. **44** 121 (2021).

[102] Cheng, R and Li J, Ríos de Anda I, Taylor TWC, Faers MA, Anderson JLR, Seddon AM, and Royall CP, Protein–Polymer Mixtures in the Colloid Limit: Aggregation, Sedimentation and Crystallization" *J. Chem. Phys*. **155** 114901 (2021).

[101] Ríos de Anda I, Coutable-Pennarun A, Brasnett C, Whitelam, S, Seddon, A, Russo J, Anderson JLR and Royall CP, "Decorated Networks of Native Proteins: Nanomaterials with Tunable Mesoscopic Domain Size" *Soft Matter* **17** 6873 (2021).

[100] Kague E, Turci F, Newman E, Yang Y, Brown KR, Agla MS, Otaify GA, Temtamy SA, Ruiz-Perez, VL Cross S, Royall CP, Witten PE and Hammond CL, "3D assessment of intervertebral disc degeneration in zebrafish identifies changes in bone density that prime disc disease", *Bone Research* **9** 39 (2021).

[99] Robinson JR, Rios de Anda I, Moore FJ, Reid JP, Sear RP and Royall CP, "Efficacy of face coverings in reducing transmission of COVID-19: calculations based on models of droplet capture", *Phys. Fluids*. **33** 043112 (2021).

[98] Mauleon-Amieva A, Mosayebi M, Hallett JE, Turci F, Liverpool TB, van Duijneveldt JS and Royall CP, "Competing Active and Passive Interactions Drive Amoeba-like Living Crystallites and Ordered Bands", *Phys. Rev. E* **102** 032609 (2020).

[97] Gregson F, Robinson JF, Miles RE, CP Royall and Reid JP "Drying and Crystallization of Evaporating Sodium Nitrate Aerosol Droplets", *J. Phys. Chem. B*. **124** 6024–6036 (2020).

Academic Journal Papers (continued)

[96] Robinson JF, Roth R and Royall CP "Morphological thermodynamics for hard bodies from a controlled expansion", *Phil. Mag.* 1—22 (2020).

[95] Robinson JF, Gregson F, Miles R, Reid JP and C. P. Royall, "Drying kinetics and nucleation in evaporating sodium nitrate aerosols", *J. Chem. Phys.* **152** 074503 (2020).

[94] Ferreiro-Córdova C, Royall CP, van Duijneveldt JS, "Anisotropic viscoelastic phase separation in polydisperse hard rods: non-sticky gelation", *Proc. Nat. Acad. Sci.* **117** 3415–3420 (2020).

[93] Hallett JE, Turci F and Royall CP, "The Devil is in the Details: Pentagonal Bipyramids and Dynamic Arrest", *J. Stat. Mech.: Theory and Experiment* 014001 (2020).
.
[92] Fussell SL, Bayliss K, Coops C, Matthews L, Li W, Briscoe WH, Faers MA, Royall CP, and van Duijneveldt, "Reversible temperature-controlled gelation in mixtures of pNIPAM microgels and non-ionic polymer surfactant", *Soft Matter* **15** 8578-8588 (2019).

[91] Robinson JF, Turci F, Roth R and Royall CP "Many-body correlations from integral geometry", *Phys. Rev. E* **100** 062126 (2019).

[90] Ingebrigtsen TS, Dyre JC, Schrøder TB and Royall CP "Crystallisation Instability in Glassforming Mixtures", *Phys. Rev. X* **9** 031016 (2019).

[89] Robinson JF, Turci F, Roth R and Royall CP "Morphometric approach to many-body correlations in hard spheres", *Phys. Rev. Lett.* **122** 068004 (2019). Editor's selection.

[88] Gregson FKA, Robinson JF, Miles REH, Royall CP and Reid JP "Drying Kinetics of Salt Solution Droplets: Water Evaporation Rates and Crystallization", *J. Phys. Chem. B* **123** 266-276 (2019).

[87] Wood N, Russo J, Turci F and Royall CP "Coupling of sedimentation and liquid structure: influence on hard sphere nucleation", *J. Chem. Phys.* **149** 204506 (2018).

[86] Dong J, Meissner M, Faers MA, Eggers J, Seddon AM and Royall CP "Opposed flow focusing: evidence of a second order jetting transition", *Soft Matter* **14** 8344 (2018).

[85] Hallett JE, Turci F and Royall CP, "Local structure in deeply supercooled liquids exhibits growing lengthscales and dynamical correlations", ***Nature Communications*** **9** 3272 (2018).

[84] Richard D, Speck T and Royall CP, "Is directed percolation in colloid-polymer mixtures linked to dynamic arrest?", *J. Chem. Phys.* **148** 241101(2018). Editor's pick.

Academic Journal Papers (continued).

[83] Royall CP "Kinetic Crystallisation Instability in Liquids with Short-Ranged Attractions", *Mol. Phys.* (Special Edition in Honour of Daan Frenkel) **116** 3076-3084 (2018).

[82] Richard D, Hallett JE, Speck T and Royall CP, "Coupling between criticality and gelation in "sticky" spheres: A structural analysis", *Soft Matte*r, **14** 5554-5564 (2018).

[81] Carter BMGD, Turci F, Ronceray P and Royall CP, "Structural Covariance in the Hard Sphere Fluid" *J. Chem. Phys.* **148** 204511 (2018).

[80] Turci F, Speck T and Royall CP, "Structural-dynamical transition in the Wahnström mixture" *Eur. Phys. J. E.* **41** 54 (2018).

[79] Zhang I, Pinchaipat R, Wilding NB, Faers MA, Bartlett P, Evans R, Royall CP, "Composition inversion in mixtures of binary colloids and polymer",*J. Chem. Phys.* **148** 184902 (2018).

[78] Pinney RK, Liverpool TB and Royall CP "Yielding of a model glass former: An interpretation with an effective system of icosahedra", *Phys. Rev. E* **97** 032609 (2018).

[77] Williams I, Turci F, Hallett JE, Crowther P, Cammarota C, Biroli G and Royall CP, "Experimental determination of configurational entropy in a two-dimensional liquid under random pinning", *J. Phys.: Condens. Matter* **30** 094003 (2018).

[76] Royall CP, Williams SR and Tanaka H, "Vitrification and gelation in sticky spheres", *J. Chem. Phys.* **148** 044501 (2018).

[75] Rios de Anda, I, Turci F, Sear R, Royall CP, "Long-Lived Non-Equilibrium Interstitial-Solid-Solutions in Binary Mixtures", *J. Chem. Phys.*, **147** 124504. (2017).

[74] Pinchaipat R, Campo M, Turci F, Hallet JE, Speck T, and Royall CP, "Experimental Evidence for a Structural-Dynamical Transition in Trajectory Space" ***Phys. Rev. Lett.*** **119** 028004 (2017).

[73] Turci F, Royall CP and Speck T "Non-Equilibrium Phase Transition in an Atomistic Glassformer: the Connection to Thermodynamics", ***Phys. Rev. X*** **7** 031028 (2017).

[72] Razali A, Fullerton CJ, Turci F, Hallet JE, Jack RL and Royall CP "Effects of vertical confinement on gelation and sedimentation of colloids", *Soft Matter* **13** 3230-3239 (2017).

[71] Turci F. Tarjus G, and Royall CP "From glass formation to icosahedral ordering by curving three-dimensional space" ***Phys. Rev. Lett.*** **118** 215501 (2017).

[70] Meissner M, Dong J, Eggers J, Seddon AM, and Royall CP, "Oil-in-water microfluidics on the colloidal scale: new routes to self-assembly and glassy packings", *Soft Matter* **13** 788-794 (2017).
[69] Jenkinson, T, Crowther P, Turci F and Royall CP, "Weak temperature-dependence of ageing of structural properties in atomistic model glassformers", *J. Chem. Phys.* **147** 054501 (2017).

[68] Griffiths S, Turci F and Royall CP "Local structure of percolating gels at very low volume fractions", *J. Chem. Phys.* **146** 014905 (2017).

[67] Royall CP and Kob W. "Locally favoured structures and dynamic length scales in a simple glass-former" *J. Stat. Mech: Theory and Experiment* 024001 (2017).

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[66] Pinney R, Liverpool, TB and Royall CP, "Structure in Sheared Supercooled Liquids: Dynamical Rearrangements of an Effective System of Icosahedra", *J. Chem. Phys.* **143** 244507 (2016).

[65] Taffs J and Royall CP "The role of fivefold symmetry in suppressing crystallisation", ***Nature Communications.*** **7** 13225 (2016).

[64] Dougan N, Crowther P, Royall CP and Turci F "Controlling local order of athermal self-propelled particles" *J. Stat. Mech: Theory and Experiment* 124001 (2016).

[63] Turci F and Royall CP, "Crystallisation driven by sedimentation: a particle resolved study" *J. Stat. Mech: Theory and Experiment* **8** 084004 (2016).

[62] Statt A, Pinchaipat R, Turci F, Evans R, and Royall CP "Direct observation in 3d of structural crossover in binary hard sphere mixtures" *J. Chem. Phys.* **144** 144506 (2016).

[61] Bzdek BR, Power RM, Simpson SH, Reid JP and Royall CP "Precise, contactless measurements of the surface tension of picolitre aerosol droplets" *Chem. Sci.* **7** 274 (2016).

[60] Williams I, Oguz EC, Speck T, Bartlett P, Loewen H and Royall CP "Transmission of torque at the nanoscale", ***Nature Physics***. **12** 98–103 (2016).

[59] Pinney R, Liverpool TB and Royall CP "Recasting a model atomic glassformer as a system of Icosahedra", *J. Chem. Phys.* **143** 244507 (2015).

[58] Royall CP, Eggers J, Furukawa A and Tanaka H, "Probing Colloidal Gels at Multiple Length Scales: The Role of Hydrodynamics" ***Phys. Rev. Lett.*** **114** 258302 (2015).

[57] Dunleavy AJ, Wiesner K, Yamamoto R and Royall CP "Mutual information reveals multiple structural relaxation mechanisms in a model glassformer", ***Nature Communications,*** **6** 6089 (2015).

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[55] Gray AT, Mould E, Royall CP and Williams I "Structural characterisation of polycrystalline colloidal monolayers in the presence of aspherical impurities", *J. Phys.: Condens. Matter* **27** 194108 (2015).

[54] Tamborini E, Royall CP and Cicuta P "Correlation between crystalline order and vitrification in colloidal monolayers", *J. Phys.: Condens. Matter* **27** 194124 (2015).

[53] Rios de Anda I, Statt A, Turci F and Royall CP "Low-density crystals in charged colloids : Comparison with Yukawa theory", *Contributions to Plasma Physics,* **55** 172-179 (2015)

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[52] Williams I, Oguz EC, Bartlett P, Loewen H and Royall CP "Flexible confinement leads to multiple relaxation regimes in glassy colloidal liquids", *J. Chem. Phys.* **142** 024505 (2015).

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[47] Malins A, Williams SR, Eggers J and Royall CP "Identification of Structure in Condensed Matter with the Topological Cluster Classification", *J. Chem. Phys.* **139** 234506 (2013).

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Academic Journal Papers (continued)

[21] Schmidt M, Royall CP, van Blaaderen, A. and Dzubiella J, "Non-equilibrium sedimentation of colloids: Confocal microscopy and Brownian dynamics simulations", *J. Phys:Cond. Matter* **20** 494222 (2008).

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[12] Royall CP, Aarts DGAL and Tanaka H, "Fluid structure in colloid-polymer mixtures: the competition between electrostatics and depletion", *J. Phys. Cond. Matter.* **17** S3401 (2005).

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[6] Royall CP, Thiel BL and Donald AM, "Radiation damage of water in environmental scanning electron microscopy", *J Microscopy-Oxford* **204**: 185-195 Part 3 (2001).

Conference Contributions (refereed)

[5] Turci F, Royall CP and Speck T, "Devitrification of the Kob-Andersen glass former: Competition with the locally favored structure", *J. Phys.: Conf. Series* **1252** 012012 (2019).

[4] Löwen H, Royall CP Ivlev, A and Morfill GE, "Charged colloidal dispersions and their link to complex plasmas", *American Institute of Physics Conference Proceedings* **1397** 201 (2011).

[3] Royall CP, Williams SR, Ohtsuka, T and Tanaka H, "Direct observation of low-energy clusters in a colloidal gel", *American Institute of Physics Conference Proceedings*, **982** 97 (2008).

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PhD thesis

[1] Royall CP, "The behaviour of silica in matt water-based lacquers", Phd thesis, University of Cambridge (2000).

CHRISTOPHER PATRICK (PADDY) ROYALL

List of Presentations. Starred are international and invited.

Total talks: 180 (166) of which 144 (94) were invited.
Talks at conferences 97 (61) of which 61 (37) were invited.
Invited seminars 61 (36) and departmental colloquia 12 (10).
One public lecture. Figures in brackets denote international presentations.

[180] "The glass transition through different timescales: dynamics meets thermodynamics", Viscous liquids and the glass transition. XX, Roskilde, Denmark, May 15th-17th.

[179] "Higher-order structure in crystallisation:from the truth about the hard sphere nucleation discrepancy to a new way forward for polymorphism", La Sapienza, Rome, Italy, Mar 1st.

[178] "From Many-Body Correlations to Tuning Collective Behaviour in Zebrafish", La Sapienza, Rome, Italy, Feb 28th.

[177] "The glass transition: is it dynamics, or both?", La Sapienza, Rome, Italy, Feb 26th.

[176] "Nucleation and Polymorph Selection in Simple Materials: Triumphs and Challenges", Crystallisation Day, Leeds, UK, Jan 12th.

[175] "Spatial organisation in 3d active matter: from colloids to fish", New statistical physics in living matter: non equilibrium states under adaptive control, Cambridge, Nov 13th-17th 2023.

[174] "Resolving Challenges in Self-Assembly with Nano Real Space Analysis", Non-equilibrium physics of self-assembly: from viruses to nano-containers, Edinburgh, Nov 13th-17th 2023.

[173] "A Reconciliation of the Theories of the Glass Transition?", International Soft Matter Conference, Osaka, Japan, Sep 4th-8th 2023.

[172] "Understanding different standpoints for the glass transition: Reconciliation trough timescales", Goettingen University, Germany, Jun 30th 2023.

[171] "Phase behaviour and higher-order structure in active matter in two and three dimensions". Max Planck Institute for Dynamics and Self-Organisation Goettingen, Germany, Jun 28th 2023.

[170] "Using simple models to understand complex behavior: Colloidal Sticky Spheres", Bayer AG, Leverkusen, Germany, Jun 6th 2023.

[169] "Visualizing failure in arrested hard and sticky spheres", Talk, "American Physical Society Meeting", Las Vegas NV, 6th-10th Mar 2023.

[168] "Self—assembly with active colloids in two and three dimensions in real life and real space", Invited Talk, "Designing Soft Matter in and Out of Equilibrium", Lorentz Centre, Leiden, Jan 30th-Feb 3rd 2023.

[167] "There are two sides to every story: different interpretations of the glass transition", Invited Talk, Symposium on Glassy Physics, TU Eindhoven Jan 16th 2023.

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List of Presentations. Starred are international and invited.

[166] "The Different Facets of Dynamical Arrest in Hard and Sticky Spheres: from Glasses to Gels", Colloquium, Montpellier University, France, 7th Dec 2022.

[165] "Life Beyond Hard Spheres" Invited Seminar, Simons Collaboration on Cracking the Glass Problem, Venice, Italy, Nov 14th-18th 2022.

[164] "An Update on The Deepest Problem in Solid State Physics", Colloquium, Eberhard Karls University Tuebingen, Germany, Jun 16th 2022.

[163] "Is the Glass Transition a Scientific Revolution Anymore?", Seminar Eberhard Karls University Tuebingen, Germany, Jun 10th 2022.

[162] "Can the Irreconcilable Theories of the Glass Transition be Reconciled?", Talk, "From Water to Colloidal Water", Roma, Italy, Jun 6th-8th 2022.

[161] "Nano-Real Space Analysis of Soft Materials from the Glass Transition to New Materials", Invited Seminar, Oxford University, UK, May 9th 2022.

[160] "Colloidal Gelation: the Complex Story of the Simple Sticky Sphere", SCI Graham Award Meeting, London, Apr 23rd 2022.

[159] "The Camera Never Lies", invited, "Self--Assembly Under Confinement 2022", Lorentz Centre, Leiden, Netherlands Feb 22nd 2022.

[158] "The Great Glass Transition Controversy: New Results and a New Way Forward?", Heinrich Heine University, Duesseldorf, Invited Seminar 27th Jan 2022.

[157] "Controlling interactions in real space across lengthscales: love, hate and criticality", Gulliver Seminar, ESPCI Paris Sep 27th, 2021.

[156] "What are we looking for from Local Structure in the Glass Transition? " Local structure meets machine learning in soft matter systems, CECAM Online, 28th Jun-1st Jul 2021.

[155] "What have Colloids done for the Glass Transition?" invited "Glassy Systems and Inter-Disciplinary Applications" Cargese Jun 28th-Jul 7th 2021.

[154] "Are the incompatible theories of the glass transition really so incompatible?" Invited Talk, "Viscous liquids and the glass transition. XVII." Søminestationen Denmark Jun 10th-12th 2021.

[153] "Towards a Unification of Theories of the Glass Transition?" Invited Talk, American Physical Society (online) Mar 14th 2021.

[152] "Just how disparate are the disparate approaches to glass, really?" Invited Talk, "Recent advances on the glass problem", CECAM online, Lausanne, Switzerland Jan 6-8th 2021.

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List of Presentations. Starred are international and invited.

[151] "Gelation in Colloidal Systems: Non-Equilibrium Phase Separation meets the Glass Transition", Invited Online Seminar, Johannes Gutenberg University, Mainz, Germany, Nov 13th 2020.

[150] "From Icosahedra to the Ideal Glass: Structure in Vitrification and Crystallisation" Invited Seminar, Nanyang Technological University, Singapore, Oct 2nd 2020.

[149] "From Arrested Phase Separation to Novel Biomaterials", Invited Seminar, Colorado State University, CO, Mar 5th 2020.

[148] "Soft Matter meets Synthetic Biology: Functional Biomolecular Networks", Invited Colloquium, University of Utrecht, Netherlands, Feb 14th 2020.

[147] "Many-body Interactions and Phase Behviour: from Colloids to Fish", SCM 20th Anniversary Symposium, Utrecht, Netherlands, Dec 18th-19th 2019.

[146] "Challenges of Gelation: the Glass Transition meets Phase Separation meets Yielding", Invited Presentation, Society of Chemical Industry Formulation Forum, Dec 5th 2019.

[145] Invited Presentation, Statistical Physics of Amorphous Solids: Instabilities and Mechanical Catastrophies, Cuernavaca, Mexico. Oct 6th-18th 2019.

[144] "Higher-Order Structure and Dynamics at Deep Supercooling", Talk, International Workshop on Glass Physics, Beijing, China, Sep 25th-29th 2019.

[143] "Reaching for the Bottom: New Particle-Resolved Approaches to Probe Deep in the Energy Landscape" Talk, StatPhys 27, Buenos Aires, Argentina, Jul 8th-12th 2019.

[142] "Many-Body Correlations in Hard Spheres: a Morphometric Approach" Talk, American Ceramic Society, Boston MA, Jun 10th-14th 2019.

[141] "Towards an Understanding of the Glass Transition? Insights from Experiment and Simulation" Invited Keynote Talk, International Soft Matter Conference, Edinburgh, UK, Jun 3rd-7th 2019.

[140] "Towards a Unified Understanding of the Physics of the Glass Transition" Invited Talk, Frontiers in Glass, Bristol, UK, May 20th-21st 2019.

[139] "The Glass Transition: Can New Data Resolve the Competition Between the Different Interpretations?", Invited Colloquium, Vienna University, Austria, May 9th 2019.

[138] "Manipulating Colloids: Corrals, Clutches and Amoebae", Invited Seminar, University of Bath, Bath UK, May 2nd 2019.

List of Presentations (continued).

[137] "A Liquid-Liquid Transition in a Colloidal Model System". Invited Talk, Water UK, Bristol, UK, Apr 11-12th 2019.

[136] "The Glass Transition: Can new data shed light on which Interpretation we should believe?", Invited Talk, American Chemical Society Spring Meeting, Orlando, FA, Mar 31st-Apr 4th 2019.

[135] "Local Structure in Deeply Supercooled Glassformers", Invited Talk, "XV International Workshop on Complex Systems", Andalo, Italy, Mar 17th-20th 2019.

[134] "Amorphous Structure: the Key to Glass and Crystallisation?", Invited Talk, Lorentz center workshop, "Machine Learning and Reverse engineering for Soft Materials", Leiden, Netherlands, Dec 10th-14th 2018.

[133] "Colloids in Real Space: a Playground for Materials Science", Invited Seminar, Maynooth University, Dublin, Ireland, 26th Oct 2018.

[132] "Revealing the Nature of Solidification: Fivefold Symmetry at the Nanoscale", Invited Seminar, ESPCI, Paris France 8th Oct 2018.

[131] "Novel Phase Behaviour in Active Colloids: “Ameobae” and Banding", Talk, "Collective behavior of soft and active matter under confinement", CECAM, Mainz, Germany, 22nd-25th Sep 2018.

[130] "Colloids in 2d: a New Active Matter Phase Diagram", Invited Seminar, The University of Tokyo, Japan, 8th Aug 2018.

[129] "Colloid-Polymer Mixtures: from model materials to formulation challenges", Invited Talk, Bayer AG, Monheim, Germany, 6th July 2018.

[128] "Amoeba-like Living Crystallites in Active Colloids", MRSEC Colloquium, Brandeis University US 24th May 2018.

[127] "Getting to the Bottom of the Energy Landscape to Tackle the Glass Transition: Experiments on Colloids and New Computer Simulation Techniques", Invited Seminar, University of Wisconsin Madison, US, 23rd May 2018.

[126] "Hard discs: Basic statistical mechanics to nano-clutches and a new state of matter", Invited Seminar, University of Bristol UK, 20th Apr 2018.

[125] "Can the Glass Transition be Defractured: a Pathway to Unify the Differing Theoretical Interpretations", Invited Seminar, University of Warwick UK, 7th Feb 2018.

List of Presentations (continued).

[124] "Getting Low in the Energy Landscape to Tackle the Glass Transition: Novel Experimental and Simulation Techniques", Invited Seminar, The University of Tokyo, Japan, 29th Nov 2017.

[123] "Attacking the Glass Problem by Getting Low in the Energy Landscape: Nano-Particle Resolved Studies and Large Deviations", Invited Seminar, Osaka University, Japan, 28th Nov 2017.

[122] "A possible approach to unify the disparate theories of the glass transition", Invited seminar, Nagoya University, Japan, 27th Nov 2017.

[121] "From colloids to atoms: fivefold symmetry in glassforming systems" Invited Talk,"Workshop on Glasses and Active Matter", Strasbourg University, France 6th Oct 2017.

[120] "Competition between crystallisation and the glass transition in colloidal systems: the role of fivefold symmetry" Invited Seminar, Hong Kong University of Science and Technology, 8th Sept 2017

[119] "Five-fold Symmetry in Colloidal Systems: Glass Transition versus Crystallisation" Invited Seminar, 6th Sept 2017, Suzhou University, China

[117] "Fivefold Symmetry and the Fate of Liquids", Invited Keynote Talk, "Liquid Matter Conference", Ljubljana, Slovenia, 17th-21st Jul 2017.

[116] "Fivefold Symmetry in Condensed Matter: Glass formation Competes with Crystallisation" Invited seminar, University of Lincoln, UK. 26th Apr 2017.

[115] "Fivefold Symmetry in the Glass Transition and Crystallisation" Invited Talk, Faraday Joint Interest Group Conference 11-13 Apr 2017.

[114] "The Existential Crisis of the Mermaid" Invited Talk, International Soft Matter Workshop Helford, Cornwall. 27th Feb-1st Mar 2017.

[113] "Hunting Mermaids in Real Space", Invited Talk, "Effects of confinement on inhomogeneous systems (CONIN)", Warsaw, Poland, 18th-21st Feb 2017.

[112] "The role of local structure in rigidity and yielding of glasses", Bridging the Scales in Glasses III, Mainz, Germany, Feb 16th-17th 2017

[111] "Direct Imaging of Deeply Supercooled Liquids: A Means to Test Descriptions of the Glass Transition", Invited Talk, Recent Advances on the Glass and Jamming Transitions, CECAM, Lausanne, Switzerland. 9th-11th Jan 2017.

[110] "The Role of Fivefold Symmetry in Condensed Matter", Invited Talk, EPSRC Network-plus "Emergence and Matter Far From Equilibrium", University of Manchester, UK. 14th-15th Dec 2016

[109] "Fivefold Symmetry in Condensed Matter: Legacy, Challenges and Perspectives", Colloquium, HH Wills Physics Laboratory, Bristol, UK. 28th Nov 2016.

[108] "Gels: a Particle-Resolved Approach". Invited Talk, Bayer Cropscience, Yuki, Ibaraki, Japan. 18th Nov 2016.

[107] "Going Deep in the Energy Landscape", Invited Seminar to Wales group, Chemistry Department, University of Cambridge, UK. 1st Nov 2016.

List of Presentations (continued).

[106] "The role of local structure in model materials: vitrification and crystallisation", Invited Seminar to Elliot group, Chemistry Department, University of Cambridge, UK. 31st Oct 2016.

[105] "Finding a Non-equilibrium Phase Transition in Trajectory Space in Experiment", Talk, Japan Physics Society, Kanazawa, Japan, 12th-16th Sept 2016.

[104] "Non-Equilibrium Phase Transition to an Ideal Glass", Invited Talk, 2nd International Workshop on Matter Out of Equilibrium, Guanajuato, México. 22nd-26th Aug 2016.

[103] "Experimental Evidence for a Non-equilibrium Phase Transition in Trajectory Space" Talk, StatPhys26, Lyons, France, 18th- 22nd Jul 2016.

[102] "Towards the glass transition with direct visualisation: nanoparticle resolved studies" Invited Talk, Out of equilbrium and Active soft matter, Roscoff, France 27th Jun-1st Jul 2016.

[101] "The role of local structure in the tortured crystallisation of glassformers", Invited Talk, "Viscous liquids and the glass transition. XIV" Søminestationen, Holbæk, 16th-18th June, 2016.

[100] "Self-assembly in real space : subtleties and surprises" Invited Seminar, University of Birmingham, UK. 11th Feb 2016.

[99] "Subtleties of Self-Assembly", Invited Seminar, Molecular Foundry, Berkeley, CA. 2nd Feb 2016.

[98] "The nature of the ideal glass if it exists", Invited Talk, "The Meaning of it All", Paris, France, 16th-18th Dec 2015.

[97] "Hard discs: Anomalous statics, anomalous dynamics and a new kind of gearbox", Invited Seminar, University of Edinburgh, UK, 7th Dec 2015.

[96] Oral Presentation, Procaccia meeting, Dead Sea, Israel, 10-11th Nov 2015.

[95] "Is dynamical arrest a thermodynamic transition : evidence, counter-evidence and challenges", Invited Colloquium, Tel Aviv University, Israel, 8th Nov 2015

[94] "Soft confinement : from corrals to clutches at small lengthscales," Invited Seminar, Durham UK, 21st Oct 2015.

[93] "Slow dynamics in real space", Invited Talk Schlumberger, Cambridge, UK, 2nd Oct 2015.

[93] "Five-fold symmetry and crystallisation", Invited Talk, International Soft Matter Workshop, Helford, Cornwall, 13th-15th Sept 2015.

[92] "Piecing together the Jigsaw of Thermodynamic Transitions in Glassformers", Talk, Viscous Liquids V, Montpellier, France, 2nd-5th May 2015.

List of Presentations (continued).

[91] "A critical analysis of the work of Hajime Tanaka", Invited Talk, Physics of Structural and Dynamical Hierarchy in Soft Matter Satellite Meeting, Hakone, Japan, 18th-19th Mar 2015.

[90] "The Colloidal Corral: Direct Measurement of Osmotic Pressure and Controlling Transmission at the Nanoscale", Invited Seminar, University of Manchester, UK, 11th Mar 2015.

[89] "A structural basis for rigidity in amorphous materials", Invited Seminar, Chemical Engineering Department, UC Santa Barbera, CA, 3rd Mar 2015.

[88] "A structural mechanism for the glass transition: beyond the lengthscale conundrum", Invited Talk, Unifying Concepts in Glass Physics, Aspen Centre, CO, Feb 2nd-6th 2015.

[87] "Back to two dimensions for real space analysis: from the equation of state to nanotransmission", Talk, Soft Condensed Matter and Beyond, Utrecht, Netherlands 18th-19th Dec 2014.

[86] "The case for a thermodynamic glass transition: fact or fiction?", Invited Colloquium, Physics Department, University of Tuebingen, Germany, 17th Dec 2014.

[85] "Transmission of torque at the nanoscale", Talk, Functional materials far from equilibrium, Functional materials far from equilibrium, University of Bristol 21st Nov 2014.

[84] "Is glass a state of matter or just a very slow liquid?", Invited seminar, Chemistry Department, University of Sydney, Australia, 11th Nov 2014.

[83] "Challenges with charged colloids", Invited Speaker, Strongly Coupled Coulomb Systems Santa Fe, New Mexico (USA) 27th Jul-1st Aug 2014.

[82] "Structure and the glass transition : the quest for a mechanism", Invited Speaker, "Viscous Liquids and the Glass Transition. XII". Holbæk, Denmark, 12th-14th June 2014.

[81] "Confined colloids : controlling structure precisely", Invited Speaker, Rideal Meeting for Dame Prof. Athene Donald FRS, London, 27th Mar 2014.

[80] "When fluids solidify : a microscopic look at freezing and vitrification", Invited seminar, Fluids Group, School of Mathematics, University of Bristol 12th Feb 2014.

[79] "Frank's legacy: icosahedra and the 'greatest unsolved problem in condensed matter", Invited seminar, Theoretical Physics, University of Bristol 29th Jan 2014.

[78] "Geometric frustration is strong in model glassforming liquids", Symposium on Fragility in Honour of Prof Austin Angell's 80th Birthday, Jawaharlal Nehru Centre for Advanced Studies, Bangalore, India, Talk, 5th-8th Jan 2014.

[77] "Towards a universal description of local structure in model glassforming liquids", Talk, Faraday discussion 167, Mesostructure and Dynamics in Liquids and Solutions, Bristol, UK, 18th-20th Sep 2013.

List of Presentations (continued).

[76] “Structure in Liquids out of Equilibrium”, Invited Speaker, 6th International Discussion Meeting on Relaxation in Complex Systems, Barcelona, 21st-26th July 2013.

[75] “Large deviations and structure in glass-forming systems”, Invited Speaker, Large Deviations, Imperial College London, UK, 10th July 2013.

[74] “Experimental developments in self-assembly : heat and light”, Invited speaker, Self-assembly: from fundamental principles to design rules for experiment, CECAM meeting, Lausanne, Switzerland, 4th-6th Mar 2013.

[73] “Driven colloidal dispersions”, Invited Speaker, Wetting and Capillarity in Complex Systems, Max-Planck Institute for the Physics of Complex Systems, Dresden, Germany, 19th-23rd Feb 2013.

[72] “Anisotropic colloids in Real Space”, Invited Speaker, Imerys, St Austell, Cornwall, UK. 28th Jan 2012.

[71] “Colloidal and metallic liquids in and out of equilibrium”, Invited Seminar University of Luxembourg, 4th Dec 2012.

[70] “Liquids in and out of equilibrium”, Invited Seminar, ESPCI Paris 29th Nov 2012.

[69] “Fun with Charged Colloids”, Invited Seminar, University of Kyoto Department of Physics 14th Nov 2012.

[68] “Colloidal and metallic liquids out of equilibrium”, Invited Seminar, University of Kyoto Department of Chemical Engineering 13th Nov 2012.

[67] "First Steps in Self-Assembly", Invited Speaker, International Soft Matter Workshop, Helford, UK, 22nd-24th September 2012.

[66] "Local structure in liquids out of equilibrium", Invited Colloquium University of Illinois Urbana-Champagne, IL, 27th Aug 2012.

[65] "Clusters in bulk materials - a local measure of the energy landscape", Invited Seminar, University of Pennsylvania, PA, 24th Aug 2012.

[64] "Gelation and vitrification : the nature of ergodic-non-ergodic transitions in sticky spheres", Talk, American Chemical Society, Philadelphia PA 19th-23rd Aug 2012.

[63] "Clusters in the bulk - the topological cluster classification", Invited Seminar University of Cambridge, 30th Jul 2012.

[62] "Structure and metastability in crystalisation in two and three dimensions", Invited Seminar, Max Planck Institute for Intelligent Systems, Stuttgart, Deutschland, 11th Jul 2012.

List of Presentations (continued)

[61] "Liquids out of equilibrium : the structural story", Invited Speaker, University of Michigan, USA, 19th Jun 2012.

[60] "Structure and sticky spheres near and far from equilibrium", Invited Speaker, Duke University, North Carolina, USA, 15th Jun 2012.

[59] "Particle-resolved studies of colloids under gravity", Invited Speaker, "Colloidal dispersions in external fields III", Bonn, Germany, 20th-23rd Mar 2012.

[58] "The glass transition is continuous but gelation is discontinuous in sticky spheres", Invited Speaker, German Physical Society Meeting, Berlin, Germany, 26th-30th Mar 2012.

[57] "The nature of dynamically arrested states near and far from equilibrium", Invited Seminar, Ecole Polytechnique Federale Lausanne 7th Feb 2012.

[56] "Sticky spheres have a continuous glass transition and a discontinuous gel transition", Talk, "Unifying concepts in glass physics V", Paris, Dec 12th-16th 2011.

[55] "The nature of the glass and gel transitions: structural and dynamic insights from colloids", Invited Speaker, "Non-equilibrium processes: the last 40 years and the future", Obergurgl, Austria, 29th Aug-2nd Sept 2011.

[54] "Geometry and Frustration", Invited Seminar, Friedrich-Alexander Universitat Erlangen Nurnberg, 8th Jun 2011.

[53] "Faceted polyhedral colloidal ‘rocks’’ low dimensional networks", Invited Speaker, Royal Society of Chemistry Prize Symposium for Daan Frenkel, Bristol, 31st May 2011.

[52] "Glasses and gels: what, where and why", Invited Speaker, "International Soft Matter Workshop", Helford, UK 18th-20th May 2011.

[51] "Faceted polyhedral colloidal ‘rocks’", Talk, "Dynamics in Viscous Liquids III", Roma, 1st Apr 2011.

[50] "In praise of the sphere: insights into the states of matter", Invited Colloquium, Department of Physics, University of Bristol 21st Mar 2011.

[49] "Clusters: a local picture of the energy landscape in simple materials", Invited Seminar, Eberhard-Karls Universitat Tuebingen, Deutschland, 25th Jan 2011.

[48] "Local structure in nucleation of ‘hard spheres’ in experiments and simulation", Invited Speaker, Nucleation and Aggregation, JNCASR, Bangalore, India, 26th-30th July, 2010.

[47] "Local structure in liquids and its relation to arrest", Talk, "Liquids out of Equilibrium", Sydney, 12-16th July 2010.

List of Presentations (continued)

[46] "When hydrodynamics do and don't matter", Invited Speaker, CECAM Workshop "Mesoscale methods for colloidal hydrodynamics", Lausanne, Switzerland 19th-21st July, 2010.

[45] "Towards a local energy landscape: clusters in the bulk and hard sphere nucleation", Invited Speaker, "Computational Molecular Science", Royal Agricultural College, UK, 27th-30th June 2010.

[44] "The role of weak charging and local structure in 'hard' sphere crystallisation", Invited Seminar, Johannes-Gutenburg University, Mainz, Deutschland, 17th June 2010.

[43] "Colloidal dispersions: complexity from simplicity", Invited Speaker, "Institute of Physics: Complexity and Nonlinear Phenomena in Biological Systems", Bath, UK, 20th May 2010.

[42] "Locally Preferred Structures and Dynamic Arrest", Invited Speaker, American Physical Society, Portland, Oregon, 18th Mar 2010.

[41] "The Consequences of Criticality, Charging, Clustering and Crumpling in Colloids", Invited Speaker, Ringberg Castle Max Planck Institute Meeting, Deutschland, 28th Feb-3rd Mar 2010.

[40*] 'Three's a crowd: colloid, colloid and polymer', Invited Speaker, Bristol-Bath-Bayreuth International Soft Matter Workshop, Cotswolds, UK, 26th Feb 2010.

[39] "Whatever happened to the attractive glass?", Invited Seminar, Bristol and Bath Soft Matter Seminar, 29th Jan 2010.

[38] "Locally Favoured Structures in Colloidal Glasses and Gels", Invited Seminar University of Montpellier, France, 1st Feb 2010.

[37] "Complexity from simplicity: the dynamics of spheres", Invited Seminar, Centre for Computational Chemistry, Bristol, UK, 25th Jan 2010.

[36] "Direct Observation of Colloids in External Fields: Equilibrium, steady-state and Instability", Talk, Institute of Physics Liquids and Complex Fluids Group, 'The Influence of External Fields in Soft Matter', London, 2nd Oct 2009.

[35] "A structural mechanism for dynamical arrest in colloids", Invited Speaker, 6th International Discussion Meeting on Relaxation in Complex Systems, Roma, 31st Aug-6th Sep 2009.

[34] 'The one-component description of model colloidal dispersions: successes and challenges', Invited Speaker, CECAM Workshop 'New Trends in Simulating Colloids: from Models to Applications', Lausanne, Switzerland, 16th-18th July 2009.

[33] "Colloids: a close look at states of matter in and out of equilibrium", Invited Seminar, University of Surrey, UK, 18th May 2009.

[32] "Colloidal States of matter: seeing the wood and the trees", Invited Seminar, University of Leeds, UK, 1st May 2009.

[31] "The strange and wonderful world of charging in non-aqueous media", Invited Speaker," Bristol Bath and Bayreuth International Soft Matter Workshop", Helford, UK, 7th-9th Mar 2009.

[30*] "The importance of local structure as a mechanism for dynamical arrest in colloidal systems", Talk, Japan-France Meeting, Kyoto, 19th-24th Nov 2008.

List of Presentations (continued)

[29] "Colloidal matter: new states and new perspectives", Invited Colloquium, University of Bayreuth, Deutschland, 4th Nov 2008.

[28] "A close look at states of matter: from the familiar to the novel" Invited public lecture to Cambridge Chemical Society, 16th Oct 2008.

[27] "States of matter: seeing the wood and the trees", Invited Departmental Seminar, University of Bristol, UK, 9th Oct 2008.

[26] "A new perspective of colloidal gels and glasses", Talk, M4 colloids day, Bath, UK, 10th July 2008.

[25] "A walk through states of matter", Invited Seminar, Johannes-Gutenburg University, Mainz, Deutschland, 17th Apr 2008

[24] "Colloidal gels and glasses : a real space analysis", Invited Seminar, University of Oxford, 4th Mar 2008.

[23] "A structural mechanism for dynamical arrest", talk, DPG (German Physical Society) meeting, Berlin, 25th-29th Feb 2008.

[22] "A structural route for dynamical arrest: locally favoured structures in colloidal gels and glasses", Invited Seminar, University of Edinburgh, 28th Jan 2008.

[21] "Treating complex fluids as simple fluids", Invited Seminar, School of Mathematics, University of Bristol, UK, 24th Jan 2008.

[20*] "Charged colloids: from DLVO to visualisation", Invited Speaker," Bristol International Soft Matter Meeting", Helford, UK, 9th Feb 2008.

[19] "Observation of low-energy clusters in a colloidal gels and glasses", Invited Seminar, Duesseldorf, Germany, 21st Nov, 2007.

[18] "Direct observation of low-energy clusters in a colloidal gel", Talk, 5th workshop on complex systems, Sendai, Japan, 25th-28th Sep 2007

[17] "Life at the single particle level: colloids, model atoms and beyond", Invited Seminar, Nagoya City University, Japan, 22nd Aug 2007.

[16] "Critical behaviour of colloidal fluids and interfaces: connecting micro- and mesoscopic lengthscales", Talk, Julich Soft Matter Days, Bonn, Deutschland, 14th-17th Nov 2006.

[15] "Direct observation of critical and interfacial behaviour in a model colloid-polymer mixture", Talk, 12th International Conference on Surface and Colloid Science, Beijing, China, 15th -20th Oct 2006.

[14] "Five-fold symmetry in colloidal liquids?", Talk, Physical Society of Japan, Chiba, Japan, Sep 23rd-26th 2006.

[13] "Interactions and fluctuations in colloidal dispersions", Invited Seminar, University of Cambridge, 9th June 2006.

List of Presentations (continued)

[12] "Falling and fluctuations in colloidal dispersions", Invited Seminar, Heinrich Heine University, Duesseldorf, Germany, 8th June 2006.

[11] "Colloids, polymers and temperature: new answers to old questions", Physical Society of Japan, Matsuyama, Japan, 27th-30th Mar 2006.

[10] "Bridging lengthscales in colloidal liquid-vapour interfaces: from critical divergence to single particles", Invited Seminar, University of Bristol, UK, 8th Feb 2006.

[9] "Quenching by heating: colloidal liquid gas critical phenomena at the single-particle level", Talk, International workshop: Soft matter as structured materials, Kyoto, Japan, 1st-3rd Aug 2005.

[8] "Quenching by heating: colloidal liquid gas critical phenomena at the single-particle level", Liquid Matter Conference, Utrecht, the Netherlands, 4th July 2005.

[7] "Sedimentation of Colloidal Dispersions in Confined Geometry", Talk, Physical Society of Japan, Tokyo, Japan, 27th Mar 2005.

[6] "Unusual Phase Behaviour in Charged Colloids: re-entrant melting and freezing", Invited Seminar, Graz University, Austria, 9th July 2004.

[5] "Unusual Phase Behaviour in Charged Colloids", European Colloid and Interface Society Meeting, Almeria, Spain, 19th-24th Sep 2004.

[4] "Unusual Phase Behaviour in Charged Colloids: re-entrant melting and freezing", FOM Statistical Physics Meeting, Netherlands, 16th-18th Feb 2004.

[3] "Confocal laser scanning microscopy and environmental SEM applied to matting water-based lacquers", Talk, American Chemical Society Fall Meeting, New Orleans, Louisana, 22nd-26th Aug 1999.

[2] "Film formation in matt water based lacquers", Talk, Royal Minerological Society, Bath University, England, Sep 1998.

[1] "Optimisation of Environmental SEM for Film formation in matt water based lacquers", Talk, Micro 98, Royal Microscopy Society, London, 7th July, 1998.