

## Katherine B. Holt

Date of birth: 3<sup>rd</sup> April 1977

<http://www.ucl.ac.uk/chemistry/people/katherine-holt>

<b>Education:</b>	1995 – 1999:	University of Oxford	MChem (1 <sup>st</sup> class)
	1999 – 2002:	University of Oxford	DPhil Chemistry (awarded Feb 2003)
<b>Employment:</b>	2013 – present:	Reader in Physical Chemistry Department of Chemistry, University College London	
	2011 – 2013:	Lecturer in Physical Chemistry Department of Chemistry, University College London	
	2006 – 2011:	EPSRC Advanced Research Fellow Department of Chemistry, University College London	
	2004 – 2006:	Ramsay Fellow in Chemical Research Department of Chemistry, University College London	
	2002 – 2004:	Postdoctoral Research Fellow University of Texas at Austin, Supervisor Prof. Allen J. Bard	

### Research Career Profile:

>£0.7 M research funding as Principal Investigator from EPSRC, NERC, Royal Society and Industry.

Supervised >25 graduate students since 2006 (PhD and MSc); graduated 15.

Awards:	2004:	Ramsay Memorial Fellowship in Chemical Research
	2006:	EPSRC Advanced Research Fellowship
	2007:	Edward Harrison Memorial Prize of the Royal Society of Chemistry

### Selected Professional Activities and Indicators of Esteem:

Elected Member of Faraday Council, Royal Society of Chemistry (2015-2018).

Academic Representative (2008 – 2011) and Treasurer (2011 – 2015) RSC Electrochemistry Group.

Member of *Chemical Society Reviews* Advisory Board (2016 - )

RSC Research Fund Working Group Physical Chemistry Representative (2016 – 2018).

Expert reviewer RSC Researcher Mobility and Undergraduate Research Bursary Grants (2015 – 2016).

Chair of Scientific Committee, Faraday Discussion 'Carbon in Electrochemistry' July 2014.

Scientific Organising Committee, UK Electrochem conference, 2008, 2011 and 2012.

External Examiner in Physical Chemistry (Undergraduate), University of Bath (2014-2017).

### Publication metrics:

48 Peer-reviewed articles; h-index = 20; 1170 citations excluding self (Web of Science, January 2017).

2 Book Chapters: In 'Synthetic Diamond Films', Wiley & Sons and 'Nanodiamond', RSC Publishing.

### Publications:

Lounasvuori, M. M., & Holt, K. B. (2017). Acid deprotonation driven by cation migration at biased graphene nanoflake electrodes.. *Chemical Communications*. doi:[10.1039/c6cc09418j](https://doi.org/10.1039/c6cc09418j)

Wang, L., Gupta, K., Goodall, J. B., Darr, J. A., & Holt, K. B. (2016). In situ spectroscopic monitoring of CO<sub>2</sub> reduction at copper oxide electrode.. *Faraday Discuss.* doi:[10.1039/c6fd00183a](https://doi.org/10.1039/c6fd00183a)

Peltola, E., Wester, N., Holt, K. B., Johansson, L. S., Koskinen, J., Myllymäki, V., & Laurila, T. (2016). Nanodiamonds on tetrahedral amorphous carbon significantly enhance dopamine detection and cell viability.. *Biosensors & bioelectronics*. doi:[10.1016/j.bios.2016.08.055](https://doi.org/10.1016/j.bios.2016.08.055)

Ghosh, S., Rahaman, A., Holt, K. B., Nordlander, E., Richmond, M. G., Kabir, S. E., & Hogarth, G. (2016). Hydrogenase biomimetics with redox-active ligands: Electrocatalytic proton reduction by [Fe-2(CO)(4)(kappa(2)-diamine)(mu-edt)] (diamine=2,2'-bipy, 1,10-phen). *POLYHEDRON*, 116, 127-135. doi:[10.1016/j.poly.2016.05.015](https://doi.org/10.1016/j.poly.2016.05.015)

Inel, G. A., Ungureau, E. -M., Varley, T. S., Hirani, M., & Holt, K. B. (2016). Solvent-surface interactions between nanodiamond and ethanol studied with in situ infrared spectroscopy. *DIAMOND AND RELATED MATERIALS*, 61, 7-13. doi:[10.1016/j.diamond.2015.11.001](https://doi.org/10.1016/j.diamond.2015.11.001)

Hollingsworth, N., Taylor, S. F. R., Galante, M. T., Jacquemin, J., Longo, C., Holt, K. B., . . . Hardacre, C. (2015). CO<sub>2</sub> capture and electrochemical conversion using superbasic [P-66614]-[124Triz]. *FARADAY DISCUSSIONS*, 183, 389-400. doi:[10.1039/c5fd00091b](https://doi.org/10.1039/c5fd00091b)

- Ghosh, S., Sanchez, B. E., Richards, I., Haque, M. N., Holt, K. B., Richmond, M. G., & Hogarth, G. (2015). Biomimetics of the [FeFe]-hydrogenase enzyme: Identification of kinetically favoured apical-basal [Fe-2(CO)(4)( $\mu$ -H){ $\kappa$ (2)-Ph<sub>2</sub>PC(Me)<sub>2</sub>PPh<sub>2</sub>}( $\mu$ -pdt)](+) as a proton-reduction catalyst. *JOURNAL OF ORGANOMETALLIC CHEMISTRY*, 812, 247-258. doi:[10.1016/j.jorganchem.2015.09.036](https://doi.org/10.1016/j.jorganchem.2015.09.036)
- Hollingsworth, N., Taylor, S. F. R., Galante, M. T., Jacquemin, J., Longo, C., Holt, K. B., . . . Hardacre, C. (2015). Reduction of Carbon Dioxide to Formate at Low Overpotential Using a Superbase Ionic Liquid. *Angewandte Chemie - International Edition*, 54(47), 14164-14168. doi:[10.1002/anie.201507629](https://doi.org/10.1002/anie.201507629)
- Lounasvuori, M. M., Rosillo-Lopez, M., Salzmann, C. G., Caruana, D. J., & Holt, K. B. (2015). The influence of acidic edge groups on the electrochemical performance of graphene nanoflakes. *JOURNAL OF ELECTROANALYTICAL CHEMISTRY*, 753, 28-34. doi:[10.1016/j.jelechem.2015.05.010](https://doi.org/10.1016/j.jelechem.2015.05.010)
- Roldan, A., Hollingsworth, N., Roffey, A., Islam, H. -U., Goodall, J. B. M., Catlow, C. R. A., . . . de Leeuw, N. H. (2015). Bio-inspired CO<sub>2</sub> conversion by iron sulfide catalysts under sustainable conditions. *CHEMICAL COMMUNICATIONS*, 51(35), 7501-7504. doi:[10.1039/c5cc02078f](https://doi.org/10.1039/c5cc02078f)
- Ghosh, S., Holt, K. B., Kabir, S. E., Richmond, M. G., & Hogarth, G. (2015). Electrocatalytic proton reduction catalysed by the low-valent tetrairon-oxo cluster [Fe-4(CO)(10)( $\kappa$ (2)-dppn)( $\mu$ (4)-O)](2-) [dppn=1,1'-bis(diphenylphosphino)naphthalene]. *DALTON TRANSACTIONS*, 44(11), 5160-5169. doi:[10.1039/c4dt03323j](https://doi.org/10.1039/c4dt03323j)
- Varley, T. S., Rosillo-Lopez, M., Sehmi, S., Hollingsworth, N., & Holt, K. B. (2015). Surface redox chemistry and mechanochemistry of insulating polystyrene nanospheres. *PHYSICAL CHEMISTRY CHEMICAL PHYSICS*, 17(3), 1837-1846. doi:[10.1039/c4cp03938f](https://doi.org/10.1039/c4cp03938f)
- Rahaman, A., Ghosh, S., Unwin, D. G., Basak-Modi, S., Holt, K. B., Kabir, S. E., . . . Hogarth, G. (2014). Bioinspired Hydrogenase Models: The Mixed-Valence Triiron Complex [Fe-3(CO)(7)( $\mu$ -edt)(2)] and Phosphine Derivatives [Fe-3(CO)(7-x)(PPh<sub>3</sub>)( $\mu$ -edt)(2)] (x=1, 2) and [Fe-3(CO)(5)( $\kappa$ (2)-diphosphine)( $\mu$ -edt)(2)] as Proton Reduction Catalysts. *ORGANOMETALLICS*, 33(6), 1356-1366. doi:[10.1021/om400691q](https://doi.org/10.1021/om400691q)
- Varley, T. S., Hirani, M., Harrison, G., & Holt, K. B. (2014). Nanodiamond surface redox chemistry: influence of physicochemical properties on catalytic processes. *FARADAY DISCUSSIONS*, 172, 349-364. doi:[10.1039/c4fd00041b](https://doi.org/10.1039/c4fd00041b)
- Lounasvuori, M. M., Rosillo-Lopez, M., Salzmann, C. G., Caruana, D. J., & Holt, K. B. (2014). Electrochemical characterisation of graphene nanoflakes with functionalised edges. *FARADAY DISCUSSIONS*, 172, 293-310. doi:[10.1039/c4fd00034j](https://doi.org/10.1039/c4fd00034j)
- Ghosh, S., Hogarth, G., Hollingsworth, N., Holt, K. B., Kabir, S. E., & Sanchez, B. E. (2014). Hydrogenase biomimetics: Fe<math>\mu</math>(CO)<math>\mu</math>(4)<math>\mu</math>(dppf)( $\mu$ -pdt) (dppf = 1,1'-bis(diphenylphosphino)ferrocene) both a proton-reduction and hydrogen oxidation catalyst. *Chemical Communications*, 50(8), 945-947. doi:[10.1039/c3cc46456c](https://doi.org/10.1039/c3cc46456c)
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- Naeem, S., Ribes, A., White, A. J. P., Haque, M. N., Holt, K. B., & Wilton-Ely, J. D. E. T. (2013). Multimetallic Complexes and Functionalized Nanoparticles Based on Oxygen- and Nitrogen-Donor Combinations. *INORGANIC CHEMISTRY*, 52(8), 4700-4713. doi:[10.1021/ic400335y](https://doi.org/10.1021/ic400335y)
- Ghosh, S., Hogarth, G., Hollingsworth, N., Holt, K. B., Richards, I., Richmond, M. G., . . . Unwin, D. (2013). Models of the iron-only hydrogenase: a comparison of chelate and bridge isomers of Fe-2(CO)(4){Ph<sub>2</sub>PN(R)PPh<sub>2</sub>}( $\mu$ -pdt) as proton-reduction catalysts. *DALTON TRANSACTIONS*, 42(19), 6775-6792. doi:[10.1039/c3dt50147g](https://doi.org/10.1039/c3dt50147g)

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