

Professor Michael John Hannon MA (Cantab.), PhD

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Director of the EPSRC Research and Training Centre in Physical Sciences for Health

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About

Mike Hannon holds the Chair of Chemical Biology at the University of Birmingham. He is also the Director of the EPSRC Research and Training Centre in Physical Sciences for Health.

Mike's research lies at the interface between chemistry and the life sciences and is focused on metal complexes in biology and medicine as both imaging agents and therapeutics. He has expertise in synthetic chemistry (organic, inorganic, supramolecular) and in applying biophysical methods to recognition of different DNA structures. In particular his work on the non-covalent recognition of DNA Y-shaped junctions has transformed the field of study and prompted a sudden and growing international activity in exploring the use of metallo-supramolecular structures in DNA recognition and as anti-cancer drugs.

Mike was Chairman (2006–9) of the EU-ESF COST Research Action D39 in the field of metallo-drugs and DNA interactions, and is the Chair-elect for the prestigious 2014 Gordon Research Conference in Metals in Medicine (Vice-Chair 2012).

For more details, visit the [Hannon Group's webpages \(http://chemweb.bham.ac.uk/~hannonmj/Mike%20page/index.htm\)](http://chemweb.bham.ac.uk/~hannonmj/Mike%20page/index.htm).

Qualifications

- Ph.D. Chemistry - University of Cambridge, 1994
- B.A. Natural Sciences (first class) - University of Cambridge, 1990
- M.A. (Cantab) - University of Cambridge, 1994

Biography

Mike Hannon qualified with a first class B.A. (Hons) in Natural Sciences from the University of Cambridge in 1990. He remained at Cambridge (90-93) to study for a PhD in Inorganic Chemistry with Professor Ed Constable and then was awarded a Royal Society ESEP Fellowship to work with Nobel laureate Professor Jean-Marie Lehn in Strasbourg (93-94). He returned to the UK in 1994 to take up a lectureship at the University of Warwick. He received two awards for teaching excellence, and was promoted to Professorship in 2005. He was appointed to the Chair of Chemical Biology at the University of Birmingham in Autumn 2005 and became Director of the PSIBS Biomedical Imaging Centre in 2008.

Much of Mike's research output appears in top chemistry journal [Angewandte Chemie \(http://onlinelibrary.wiley.com/doi/10.1002/anie.201007951/abstract\)](http://onlinelibrary.wiley.com/doi/10.1002/anie.201007951/abstract), and in 2011 the journal published an author profile about him, so you can learn more about his favourite football team and what he and his research team would do if he won the lottery.

The [Hannon Group's webpages \(http://chemweb.bham.ac.uk/~hannonmj/Mike%20page/index.htm\)](http://chemweb.bham.ac.uk/~hannonmj/Mike%20page/index.htm) contain more information about Mike and his research team.

Teaching

Teaching Programmes

- MSci and BSc Chemistry
- [Physical Sciences for Health \(Sci-Phy-4-Health\) Integrated PhD \(http://www.birmingham.ac.uk/research/activity/psibs/programme/SciPhy.aspx\)](http://www.birmingham.ac.uk/research/activity/psibs/programme/SciPhy.aspx)

Postgraduate supervision

Opportunities are available for doctoral research students in the following areas:

- Imaging Chemistry for Biology and Medicine
- Molecular Probe Design
- Bioinorganic Chemistry
- Metal-based Drugs
- DNA Recognition
- Biological Chemistry and Chemical Biology
- Supramolecular Chemistry
- Physical Sciences of Imaging in the Biomedical Sciences

The [Hannon Group's webpages \(http://chemweb.bham.ac.uk/~hannonmj/Mike%20page/index.htm\)](http://chemweb.bham.ac.uk/~hannonmj/Mike%20page/index.htm) contain details of our current research students and their projects.

If you are interesting in studying any of these subject areas, please contact Professor Hannon or his PA on the contact details above.

For more information about the Sci-Phy-4-Health programme, please contact the Centre Administrator either via email: sci-phy@contacts.bham.ac.uk (mailto:sci-phy@contacts.bham.ac.uk) or on telephone number +44 (0) 121 414 8808.

Research

Details of our research programme can be found on the [Hannon Group's webpages \(http://chemweb.bham.ac.uk/~hannonmj/Mike%20page/index.htm\)](http://chemweb.bham.ac.uk/~hannonmj/Mike%20page/index.htm).

Adobe Flash Player or QuickTime is required for video playback. [Get the latest Flash Player](#) [Get the latest version of QuickTime](#)

Publications

A full list of publications is available on the [Hannon Group's webpages \(http://chemweb.bham.ac.uk/~hannonmj/Mike%20page/index.htm\)](http://chemweb.bham.ac.uk/~hannonmj/Mike%20page/index.htm).

100. Noncovalent DNA-Binding Metallo-Supramolecular Cylinders Prevent DNA Transactions in vitro

C. Ducani, A. Leczkowska, N.J. Hodges, M.J. Hannon, *Angew. Chem. Intl. Ed.*, 2010, 49, 8942-8945, DOI: [10.1002/anie.201004471](https://doi.org/10.1002/anie.201004471) (<http://onlinelibrary.wiley.com/doi/10.1002/anie.201004471/abstract;jsessionid=8F2DF568F8B188A1612DD9EAD6FAE445.d02t02>)

99. Conjugation of testosterone modifies the interaction of mono-functional cationic platinum(II) complexes with DNA, causing significant alterations to the DNA helix

C. Sanchez-Cano, M. Huxley, C. Ducani, A.E. Hamad, M.J. Browning, C. Navarro-Ranninger, A.G. Quiroga, A. Rodger, M. J. Hannon, *Dalton Trans.*, 2010, 39, 11365-11374, DOI: [10.1039/C0DT00839G](https://doi.org/10.1039/C0DT00839G) (<http://pubs.rsc.org/en/Content/ArticleLanding/2010/DT/c0dt00839g>)

98. An androgenic steroid delivery vector that imparts activity to a non-conventional platinum(II) metallo-drug

M. Huxley, C. Sanchez-Cano, M.J. Browning, C. Navarro-Ranninger, A.G. Quiroga, A. Rodger, M. J. Hannon, *Dalton Trans.*, 2010, 39, 11353-11364, DOI: [10.1039/C0DT00838A](https://doi.org/10.1039/C0DT00838A) (<http://pubs.rsc.org/en/Content/ArticleLanding/2010/DT/c0dt00838a>)

97. Towards functionalizable DNA frames: Self assembly of two-component 3D DNA arrays through induction of DNA three-way junction branch points by supramolecular cylinders

D.R. Boer, J. M. C. A. Kerckhoffs, Y. Parajo, M. Pascu, I. Usón, P. Lincoln, M.J. Hannon, M. Coll, *Angew. Chem. Intl. Ed.*, 2010, 49, 2336-2339, DOI: [10.1002/anie.200906742](https://doi.org/10.1002/anie.200906742) (<http://www3.interscience.wiley.com/journal/123304761/abstract>)

96. Issues surrounding standard cytotoxicity testing for assessing activity of non-covalent DNA-binding metallo-drugs

A.J. Pope, C. Bruce, B. Kysela, M.J. Hannon, *Dalton Trans.*, 2010, 39, 2772-2774, DOI: [10.1039/b927129p](https://doi.org/10.1039/b927129p) (<http://www.rsc.org/publishing/journals/DT/article.asp?doi=b927129p>)

95. Electron Capture Dissociation Mass Spectrometry of Metallo-Supramolecular Complexes.

M.A. Kaczorowska, A.C.G. Hotze, M.J. Hannon, H.J. Cooper, *J. Am. Soc. Mass. Spectrom.*, 2009, 21, 300-309, DOI: [10.1016/j.jasms.2009.10.018](https://doi.org/10.1016/j.jasms.2009.10.018) (<http://www.sciencedirect.com/science?ob=ArticleListURL&method=list&ArticleListID=1172740752&sort=r&view=c&acct=C000010083&version=1&urlVersion=0&userid=122868&md5=89ddf42ecc8a16c38cf10c391c3ac600>)

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C. Sanchez-Cano, M.J. Hannon, *Dalton Trans.*, 2009, 48, 10765-10773. DOI: [10.1039/b912711a](https://doi.org/10.1039/b912711a) (<http://www.rsc.org/publishing/journals/DT/article.asp?doi=b912711a>)

92. Preparation of novel banana-shaped triple helical liquid crystals by metal coordination.

P. Iqbal, M. Mayanditheuar, L. Childs, M.J. Hannon, N. Spencer, P.R. Ashton, J.A. Preece, *Materials*, 2009, 2, 146-168. DOI (<http://www.mdpi.com/1996-1944/2/1/146/pdf>) : [10.3390/ma2010146](https://doi.org/10.3390/ma2010146) (<http://www.mdpi.com/1996-1944/2/1/146/pdf>)

91. Effect of bridging ligand structure on the thermal stability and DNA binding properties of iron(II) triple helicates.

Y. Parajo, J. Malina, I. Meistermann, G.J. Clarkson, M. Pascu, A. Rodger, M.J. Hannon, *Per Lincoln, Dalton Trans.*, 2009, 25, 4868-4874. DOI: [10.1039/b822039e](https://doi.org/10.1039/b822039e) (<http://www.rsc.org/publishing/journals/DT/article.asp?doi=b822039e>)

90. Ruthenium polypyridyl complexes and their modes of interaction with DNA: Is there a correlation between these interactions and the antitumor activity of the compounds?

E. Corral, A.C. Hotze, H. den Dulck, A. Leczkowska, A. Rodger, M.J. Hannon, *J. Biol. Inorg. Chem.*, 2009, 14, 439-448. DOI [10.1007/s00775-008-0460-x](https://doi.org/10.1007/s00775-008-0460-x) (<http://dx.doi.org/10.1007/s00775-008-0460-x>)

89. Antimicrobial activity of an iron triple helicate.

A.D. Richards, A. Rodger, M.J. Hannon, A. Bolhuis, *Int. J. Antimicrob. Agents*, 2009, 33, 469-472. DOI: [10.1016/j.ijantimicag.2008.10.031](https://doi.org/10.1016/j.ijantimicag.2008.10.031) (<http://dx.doi.org/10.1016/j.ijantimicag.2008.10.031>)

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L. Cardo, M.J. Hannon, *Inorg. Chim. Acta.*, 2009, 362, 784-792. DOI [10.1016/j.ica.2008.02.050](https://doi.org/10.1016/j.ica.2008.02.050) (<http://dx.doi.org/10.1016/j.ica.2008.02.050>)

87. A supramolecular triple-stranded iron cylinder with unprecedented DNA binding action is a potent cytostatic and apoptotic agent without exhibiting genotoxicity

A.C.G. Hotze, N.J. Hodges, R.E. Hayden, C. Sanchez-Cano, C. Paines, N. Male, M.-K. Tse, C.M. Bunce, J.K. Chipman, M.J. Hannon, *Chemistry & Biology*, 2008, 15, 1258-1267. DOI

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U. McDonnell, M. R. Hicks, M. J. Hannon, A. Rodger, *J Inorg Biochem.*, 2008, 102, 2052-2059. DOI 10.1016/j.jinorgbio.2008.06.006 (<http://dx.doi.org/10.1016/j.jinorgbio.2008.06.006>)

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J. Malina, M. J. Hannon, and V. Brabec, *Chem. Eur J.*, 2008, 14, 10408-10414. DOI 10.1002/chem.200801364 (<http://dx.doi.org/10.1002/chem.200801364>)

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J. Malina, M. J. Hannon, V. Brabec, *Nucleic Acids Res.*, 2008, 36, 3630-3638. DOI 10.1093/nar/gkn244 (<http://dx.doi.org/10.1093/nar/gkn244>)

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Q. Jiang, Z.Y. Wu, Y.M. Zhang, A.C.G. Hotze, M.J. Hannon, Z.J. Guo, *Dalton Trans.*, 2008, 3054-60. DOI: 10.1039/b719010g (<http://dx.doi.org/10.1039/b719010g>)

82. New organogelators based on cyclotrimeratrylene platforms bearing 2-dimethylacetal-5-carbonylpyridine fragments

D. Bardelang, F. Camerel, R. Ziessel, M. Schmutz, M. J. Hannon, *J. Mater. Chem.*, 2008, 18, 489-494. DOI 10.1039/b712413a (<http://dx.doi.org/10.1039/b712413a>)

81. Synthesis and Cytotoxicity of Dinuclear Complexes containing Ruthenium(II) Bipyridyl units linked by a bis-pyridylimine ligand

U. McDonnell, J.M.C.A. Kerchoffs, R.P.M. Castineiras, M.R. Hicks, A.C.G. Hotze, M.J. Hannon, A. Rodger, *Dalton Trans.*, 2008, 667-675. DOI 10.1039/b711080d (<http://dx.doi.org/10.1039/b711080d>)

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M.J. Hannon, *Pure and Applied Chemistry*, 2007, 79, 2243-2261. DOI 10.1351/pac200779122243 (<http://dx.doi.org/10.1351/pac200779122243>)

79. Influence of surface shape on DNA binding of bimetallo helicates

J. C. Peberdy, J. Malina, S. Khalid, M. J. Hannon, A. Rodger, *J. Inorg. Biochem.*, 2007, 101, 1937-1945 (special issue in Memory of Edward I. Stiefel). DOI 10.1016/j.jinorgbio.2007.07.005 (<http://dx.doi.org/10.1016/j.jinorgbio.2007.07.005>)

78. Sodium Chains as Core Nanowires for Gelation of Organic Solvents from a Functionalized Nicotinic Acid and its Sodium Salt

D. Bardelang, F. Camerel, A. C. G. Hotze, B. Kariuki, B. Paik, M. Schmutz, R. Ziessel, M. J. Hannon, *Chem. Eur. J.*, 2007, 13, 9277-9285. DOI 10.1002/chem.200700660 (<http://dx.doi.org/10.1002/chem.200700660>)

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J. Hamblin, F. Tuna, S. Bunce, L. J. Childs, A. Jackson, W. Errington, N. W. Alcock, H. Nierengarten, A. Van Dorselaer, E. Leize-Wagner, M. J. Hannon, *Chem. Eur. J.*, 2007, 13, 9286-9296. DOI 10.1002/chem.200700848 (<http://dx.doi.org/10.1002/chem.200700848>)

76. Design and Non-Covalent DNA bonding of Platinum (II) Metallocalix[4]arenes

M. A. Galindo, D. Olea, M A Romero, J. Gomez, P. del Castillo, M. J. Hannon, A. Rodger, F. Zamora, J. A. R. Navarro, *Chem. Eur. J.*, 2007, 13, 5075-5081. DOI 10.1002/chem.200601581 (<http://dx.doi.org/10.1002/chem.200601581>)

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75. Dinuclear Ruthenium(II) triple-stranded helicates: luminiscent supramolecular cylinders that bind and coil DNA and exhibit activity against cancer cell lines

G. I. Pascu, A. C. G. Hotze, C. Sanchez Cano, B. M. Kariuki, M. J. Hannon, *Angew. Chem., Intl. Ed.*, 2007, 46, 4374-4378. DOI 10.1002/anie.200700656 (<http://dx.doi.org/10.1002/anie.200700656>)

74. DNA Three-Way Junction with a Dinuclear Iron(II) Supramolecular Helicate at the Center: A NMR structural Study

L. Cerasino, M. J. Hannon, E. Sletten, *Inorg. Chem.*, 2007, 46, 6245-6251. DOI 10.1021/ic062415c (<http://dx.doi.org/10.1021/ic062415c>)

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73. Recognition of DNA Three-Way Junctions by Metallosupramolecular Cylinders: Gel Electrophoresis Studies

J. Malina, M. J. Hannon, V. Brabec, *Chem. Eur. J.*, 2007, 13, 3871-3877. DOI 10.1002/chem.200700159 (<http://dx.doi.org/10.1002/chem.200700159>)

72. Enantiomeric resolution of supramolecular helicates with different surface topographies

J. M. C. A. Kerckhoffs, J. C. Peberdy, I. Meistermann, L J. Childs, C. J. Isaac, C. R. Pearmund, V. Reudegger, S. Khalid, N. W. Alcock, M. J. Hannon and A. Rodger, *Dalton Trans.*, 2007, 734-742. DOI 10.1039/b614093a (<http://dx.doi.org/10.1039/b614093a>)

71. Supramolecular DNA recognition

M.J. Hannon, *Chem. Soc. Rev.*, 2007, 36, 280-295. DOI 10.1039/b606046n (<http://dx.doi.org/10.1039/b606046n>)

70. Shape effects on the activity of synthetic major-groove binding ligands

S. Khalid, M.J. Hannon, A. Rodger, P.M. Rodger, *Journal of Molecular Graphics and Modelling*, 2007, 794-800. DOI 10.1016/j.jmglm.2006.07.004 (<http://dx.doi.org/10.1016/j.jmglm.2006.07.004>)

69. Dinuclear Double Stranded Metallo-supramolecular Ruthenium Complexes; Potential Anticancer Drugs

A.C.G. Hotze, B.M. Kariuki and M.J. Hannon, *Angew. Chem., Intl. Ed.*, 2006, 45, 4839-4842. DOI 10.1002/anie.200601351 (<http://dx.doi.org/10.1002/anie.200601351>)

68. Far-Red luminescent ruthenium pyridylimine complexes; building blocks for multinuclear arrays

A.C.G. Hotze, J.A. Faiz, N. Mourtzis, G.I. Pascu, P.R.A. Webber, G. J. Clarkson, K. Yannakopoulou, Z. Pikramenou and M.J. Hannon, *Dalton. Trans.*, 2006, 24, 3025 -3034. DOI 10.1039/b518027a (<http://dx.doi.org/10.1039/b518027a>)

67. An estrogen-platinum terpyridine conjugate: DNA and protein binding and cellular delivery

M.J. Hannon, P.S. Green, D.M. Fisher, P.J. Derrick, J.L. Beck, S.J. Watt, M.M. Sheil, P.R. Barker, N.W. Alcock, R.J. Price, K.J. Sanders, R. Pither, J. Davis and A. Rodger, *Chem. Eur.*

J., 2006, 12, 8000-8013. [DOI 10.1002/chem.200501012](https://doi.org/10.1002/chem.200501012) (<http://dx.doi.org/10.1002/chem.200501012>)

66. A DNA-binding copper(I) metallo-supramolecular cylinder that can act as an artificial nuclease

L.J. Childs, J. Malina, B.E. Rolfsnes, M. Pascu, M.J. Prieto, M.J. Broome, P.M. Rodger, E. Sletten, V. Moreno, A. Rodger and M.J. Hannon, *Chem. Eur. J.*, 2006, 12, 4919-4927. [DOI 10.1002/chem.200600060](https://doi.org/10.1002/chem.200600060) (<http://dx.doi.org/10.1002/chem.200600060>)

65. Aggregation of imine - based metallo-supramolecular architectures through π - π interactions

M. Pascu, G.J. Clarkson, B. M. Kariuki and M. J. Hannon, *Dalton Trans.* 2006, 22, 2635-2642. [DOI 10.1039/b517643c](https://doi.org/10.1039/b517643c) (<http://dx.doi.org/10.1039/b517643c>)

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S. Khalid, M.J. Hannon, A. Rodger and P.M. Rodger, *Chem. Eur. J.*, 2006, 12, 3493-3506. [DOI 10.1002/chem.200501168](https://doi.org/10.1002/chem.200501168) (<http://dx.doi.org/10.1002/chem.200501168>)

63. Molecular recognition of a three-way DNA junction by a metallo-supramolecular helicate

A. Oleksy, A.G. Blanco, R. Boer, I. Usón, J. Aymami, A. Rodger, M.J. Hannon and M. Coll, *Angew. Chem., Intl. Ed.*, 2006, 45, 1227-1231. [DOI 10.1002/anie.200503822](https://doi.org/10.1002/anie.200503822) (<http://www3.interscience.wiley.com/journal/112396416/abstract>)

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61. Readily prepared metallo-supramolecular triple-helicates designed to exhibit spin-crossover behaviour.

F. Tuna, M.R. Lees, G.J. Clarkson and M.J. Hannon, *Chem. Eur. J.*, 2004, 10, 5737-5750. [DOI 10.1002/chem.200400518](https://doi.org/10.1002/chem.200400518) (<http://dx.doi.org/10.1002/chem.200400518>)

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M. Pascu, F. Tuna, E. Kolodziejczyk, G.I. Pascu, G. Clarkson and M.J. Hannon, *Dalton Trans.*, 2004, 1546-55. [DOI 10.1039/b403749a](https://doi.org/10.1039/b403749a) (<http://dx.doi.org/10.1039/b403749a>)

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55. Aggregation of metallo-supramolecular architectures by metallo-assembled hydrogen bonding sites.

A. Lavalette, F. Tuna, J. Hamblin, A. Jackson, G. Clarkson, N.W. Alcock and M.J. Hannon, *Chem. Commun.*, 2003, 2666-2667. [DOI 10.1039/b308963k](https://doi.org/10.1039/b308963k) (<http://dx.doi.org/10.1039/b308963k>)

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M.J. Hannon, *Supramolecular Chem*, 2003, 15, 475. [DOI 10.1080/10610270310001632386](https://doi.org/10.1080/10610270310001632386) (<http://dx.doi.org/10.1080/10610270310001632386>)

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A. Rodger, J. Rajendra, R. Mortimer, T. Andrews, J.B. Hirst, A.T.B. Gilbert, R. Murrington, D. Halsall, T. Dafforn, M. Ardhammar, B. Norden, C.A. Woolhead, C. Robinson, T. Pinheiro, J. Kazlauskaitė, M. Seymour, N. Perez and M.J. Hannon, in *Biophysical Chemistry: Membranes and Proteins*, Templer, R.H. and Leatherbarrow, R. (eds) The Royal Society of Chemistry, Cambridge, 2002, pp 3-19.

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