

Prof. Phillip John
Professor Emeritus
School of Engineering & Physical Sciences
Postal address:
Riccarton
Edinburgh
United Kingdom
Email: P.John@hw.ac.uk



Prizes

Order of the British Empire

John, Phillip (Recipient), 2018

Research interests

Phillip John OBE BSc PhD DSc has published over 200 peer reviewed publications, patents, book chapters and reviews, managed over fifty grants from Research Council, Government and industry sources, supervised 31 PhD and research MSc students (27 PhDs), given numerous invited lectures at international conferences. Member of the EPSRC College and currently EU Rapporteur and expert reviewer. The research achievements underpin the science of advanced materials. As an early career researcher, he was invited to present the Irvine Review Lecture (1982) at the University of St Andrews and, on two occasions, the Ames Lectures (1983, 1990) at the University of Edinburgh. He was honored by two National Research Council of Canada (NRC) Distinguished Visiting Scientist awards in the 1980s collaborating with Peter Hackett FRSC, former Vice President of NRC, in the area of laser chemistry. Following a commissioned paper (1989) to The Cabinet Office, he chaired the SERC Town meeting on CVD diamond developing the Council strategy in this area and obtained the first UK Research Council grant on the CVD growth of diamond. He was appointed to the International Programme Committee (1995) and, ultimately in 1997, the Organising Committee (4 international scientists) of the pre-eminent International Diamond Conference in 1997. Phillip has served on the Management Committee of the SERC supported 'Research Network on Carbon Materials' and from 2002 the Management Board of the £2.4m EPSRC initiative 'Carbon Based Electronics: A National Consortium'. An EPSRC grant (2007) worth £1.4m was awarded for next generation materials for plasma fusion in collaboration with (the late) Professor Marshall Stoneham FRS at UCL. Phillip is a reviewer and Rapporteur for two Horizon 2020 research programmes in materials technology.

Phillip continues to collaborate with the Korea Institute of Science and Technology and has jointly published 15 papers and been granted five joint patents on diamond and graphene; a 2008 paper (Journal of Chemical Physics) on templating graphene on (111) diamond planes has been highly cited (>180 in Google Scholar)

Research interests include thermal, laser and plasma chemical vapour deposition of silicon and diamond.

Laser ionisation time-of-flight mass spectrometry.

Diamond biosensor applications. Plasma resistant diamond coatings for fusion reactors.

Graphene and carbon nanotubes.

Educational Technology.

Teaching Interests

Apart from his teaching, research and administrative duties he has been the Head of the academic development team for SCHOLAR and, since 2003, been Executive Chair of the SCHOLAR Forum. SCHOLAR (www.scholar.hw.ac.uk) providing innovative web-based courses to all 32 Education Authorities (~ 400 schools), five within the College sector and 33 independent schools in Scotland. SCHOLAR provides 37 complete Scottish Qualification Authority National 5, Higher and Advanced Higher STEM, Languages and Business subjects to over 130,000 student registrations and 10,000 teachers. SCHOLAR is continuing to attract international attention as one of the world's largest e-learning programmes for schools.

Phillip has been the Vice-Chair and Chair, and a founding Board member, of the UK e-Assessment Association comprising the main awarding bodies and leading educational technology companies.

Phillip was elected as Dean of Science & Engineering for October 2007 to March 2013 and subsequently appointed as Senior Dean of the University until the 30th July 2015

SCHOLAR partnered with the Australian Council of Educational Research (ACER) to win the tender, in 2016, for the Scottish National Standardised Assessments. The role of SCHOLAR is to provide a professional learning for teachers in Scotland; the national training programme has been extremely well received by teachers and authorities alike. Following retirement from Heriot-Watt in December 2018 Phillip took up a post as Senior Consultant to the Australian Council for Educational Research and was awarded an Honorary Professorship at the University of Edinburgh.

Phillip was awarded an OBE in the Queen's Birthday Honours in 2018 for 'services to education in Scotland'.

Research outputs

Deposition of polycrystalline and nanocrystalline diamond on graphite: effects of surface pre-treatments

Villalpando, I., John, P., Porro, S. & Wilson, J. I. B., Mar 2017, In: Applied Physics A: Materials Science and Processing. 123, 3, 183.

Growth of carbon fibres, sheets and tubes on diamond films under high power plasma etching conditions

Villalpando, I., John, P. & Wilson, J. I. B., 2017, In: Revista Mexicana de Fisica. 63, 2, p. 155-161 7 p.

The Nature of Metastable AA' Graphite: Low Dimensional Nano- and Single-Crystalline Forms

Lee, J. K., Kim, J-G., Hembram, K. P. S. S., Kim, Y-I., Min, B-K., Park, Y., Lee, J. K., Moon, D. J., Lee, W., Lee, S. G. & John, P., 21 Dec 2016, In: Scientific Reports. 6, 39624.

Carbon fibre production during hydrogen plasma etching of diamond films

Villalpando de la Torre, I., John, P., Porro, S. & Wilson, J. I. B., 20 Jun 2016, In: RSC Advances. 6, 69, p. 64421-64427 7 p.

Structure of single-wall carbon nanotubes: A graphene helix

Lee, J. K., Lee, S., Kim, J. G., Min, B. K., Kim, Y. I., Lee, K. I., An, K. H. & John, P., 27 Aug 2014, In: Small. 10, 16, p. 3283-3290 8 p.

The seeded growth of graphene

Lee, J. K., Lee, S., Kim, Y. I., Kim, J. G., Min, B. K., Lee, K. I., Park, Y. & John, P., 14 Jul 2014, In: Scientific Reports. 4, 5682.

Structure of multi-wall carbon nanotubes: AA' stacked graphene helices

Lee, J-K., Lee, S., Kim, Y-I., Kim, J-G., Lee, K-I., Ahn, J-P., Min, B-K., Yu, C-J., Chae, K. H. & John, P., 2013, In: Applied Physics Letters. 102, 16, 5 p., 161911.

Large Scale Blended Learning: An Evaluation of the SCHOLAR Programme

John, P., Sim, S. & Morris, M., 2012, In: International Journal of e-Assessment. 2, 2

Diamond coatings exposure to fusion-relevant plasma conditions

Porro, S., De Temmerman, G., Lisgo, S., Rudakov, D. L., Litnovsky, A., Petersson, P., John, P. & Wilson, J. I. B., 1 Aug 2011, In: Journal of Nuclear Materials. 415, 1, p. S161-S164 4 p.

Processing of 50 nm gate-length hydrogen terminated diamond FETs for high frequency and high power applications

Moran, D. A. J., MacLaren, D. A., Porro, S., McLelland, H., John, P. & Wilson, J. I. B., Aug 2011, In: Microelectronic Engineering. 88, 8, p. 2691-2693 3 p.

Hydrogen plasma etching of diamond films deposited on graphite

Villalpando, I., John, P., Porro, S. & Wilson, J. I. B., May 2011, In: Diamond and Related Materials. 20, 5-6, p. 711-716 6 p.

50nm gate-length hydrogen terminated diamond field effect transistors characterization and inspection of operation

Moran, D. A. J., MacLaren, D. A., Porro, S., Hill, R., McLelland, H., John, P. & Wilson, J., 2011, *Diamond Electronics and Bioelectronics - Fundamentals to Applications IV*. Cambridge University Press, p. 141-147 7 p. (Materials Research Society Symposium Proceedings; vol. 1282).

Hydrogen plasma interaction with (100) diamond surfaces

John, P. & Stoiku, M. D., 2011, In: Physical Chemistry Chemical Physics. 13, 24, p. 11503-11510 8 p.

Plasma enhanced CVD of materials for energy convertors: nano-silicon for solar cells and nano-diamond for fusion reactors

Wilson, J. I. B., Porro, S., John, P., Villalpando de la Torre, I. & Lind, H., 2011, In: Romanian Journal of Physics. 56, supplement, p. 15-22 8 p.

Crystalline diamond/graphite nanoflake hybrid films

Lee, J. K. & John, P., 1 Nov 2010, In: Thin Solid Films. 519, 2, p. 625-629 5 p.

Graphene-diamond hybrid material and method for preparing same using chemical vapor deposition

Lee, J. K., Lee, S. C., John, P., Lee, W. S. & Lee, J. K., 17 Aug 2010, Patent No. US 7,776.445 B2, 14 Aug 2008, Priority date 14 Aug 2007

Effects in CVD diamond exposed to fusion plasmas

Porro, S., De Temmerman, G., John, P., Lisgo, S., Villalpando, I. & Wilson, J. I. B., Aug 2010, In: Physica Status Solidi (A) Applications and Materials Science. 207, 8, p. 2004-

Surface analysis of CVD diamond exposed to fusion plasma

Porro, S., De Temmerman, G., MacLaren, D. A., Lisgo, S., Rudakov, D. L., Westerhout, J., Wiora, M., John, P., Villalpando, I. & Wilson, J. I. B., Jul 2010, In: Diamond and Related Materials. 19, 7-9, p. 818-823 6 p.

Characterisation and Inspection of 50nm Gate-Length Hydrogen Terminated Diamond Field Effect Transistors

Moran, D. A. J., MacLaren, D. A., Porro, S., Hill, R., McClelland, H., John, P. & Wilson, J. I. B., 2010.

Development and operation of 50nm gate length hydrogen terminated diamond field effect transistors

Moran, D., MacLaren, D. A., Porro, S., Hill, R., McClelland, H., John, P. & Wilson, J. I. B., 2010.

Effects in CVD diamond exposed to fusion plasmas

Porro, S., De Temmerman, G., John, P., Lisgo, S., Villalpando, I. & Wilson, J. I. B., Sep 2009, In: Physica Status Solidi (A) Applications and Materials Science. 206, 9, p. 2028-2032 5 p.

Nanocrystalline diamond coating of fusion plasma facing components

Porro, S., De Temmerman, G., Lisgo, S., John, P., Villalpando, I., Zimmer, J. W., Johnson, B. & Wilson, J. I. B., May 2009, In: Diamond and Related Materials. 18, 5-8, p. 740-744 5 p.

Interactions of diamond surfaces with fusion relevant plasmas

De Temmerman, G., Doerner, R. P., John, P., Lisgo, S., Litnovsky, A., Marot, L., Porro, S., Petersson, P., Rubel, M., Rudakov, D. L., Van Rooij, G., Westerhout, J. & Wilson, J. I. B., 2009, In: Physica Scripta T. 2009, T138, 14013.

Synthesis and characterization of freestanding diamond/carbon nanoflake hybrid films

Lee, J. K., John, P., Kim, S. C., Lee, W. S. & Wilson, J. I. B., Jul 2008, In: Diamond and Related Materials. 17, 7-10, p. 1216-1220 5 p.

Unusual morphology of CVD diamond surfaces after RIE

Stoiku, M. D., John, P. & Wilson, J. I. B., Jul 2008, In: Diamond and Related Materials. 17, 7-10, p. 1164-1168 5 p.

The growth of AA graphite on (111) diamond

Lee, J. K., Lee, S. C., Ahn, J. P., Kim, S. C., Wilson, J. I. B. & John, P., 2008, In: Journal of Chemical Physics. 129, 23, 234709.

Fabrication of spherical diamond microshells

Lee, J. K., Anderson, M. W., Gray, F. A. & John, P., Apr 2007, In: Diamond and Related Materials. 16, 4-7 SPEC. ISS., p. 701-704 4 p.

The fabrication of diamond microshells

John, P., Lee, J. K., Anderson, M., Gray, F. & Wilson, J., Dec 2006, In: Chemical Vapor Deposition. 12, 12, p. 714-717 4 p.

Explosive oxidation of HPHT diamond particles

Lee, J. K., Anderson, M. W., Gray, F. A. & John, P., Sep 2006, In: Diamond and Related Materials. 15, 9, p. 1206-1209 4 p.

The SCHOLAR Programme in Scotland

John, P., 2006, *Flexible delivery: an evaluation of the use of the virtual learning environment in higher education across Scotland*. Quality Assurance Agency for Higher Education, p. 33-44 12 p.

Reactions of amines with CVD diamond nanopowders

Lee, J. K., Anderson, M. W., Gray, F. A., John, P. & Lee, J. Y., Mar 2005, In: *Diamond and Related Materials*. 14, 3-7, p. 675-678 4 p.

The role of C₂ in nanocrystalline diamond growth

Rabeau, J. R., John, P., Wilson, J. I. B. & Fan, Y., 1 Dec 2004, In: *Journal of Applied Physics*. 96, 11, p. 6724-6732 9 p.

Synthesis of diamond spheres

Lee, J-K., Baik, Y-J., Eun, K. Y., Lee, J-Y., Park, J-W. & John, P., Jun 2004, In: *Chemical Vapor Deposition*. 10, 3, p. 133-136 4 p.

Oxidation of CVD diamond powders

Lee, J. K., Anderson, M. W., Gray, F. A., John, P., Lee, J. Y., Baik, Y. J. & Eun, K. Y., Apr 2004, In: *Diamond and Related Materials*. 13, 4-8, p. 1070-1074 5 p.

Surface confined pseudorotaxanes with electrochemically controllable complexation properties

Bryce, M. R., Cooke, G., Duclairoir, F. M. A., John, P., Perepichka, D. F., Polwart, N., Rotello, V. M., Stoddart, J. F. & Tseng, H. R., 1 Sep 2003, In: *Journal of Materials Chemistry*. 13, 9, p. 2111-2117 7 p.

The oxidation of diamond: The geometry and stretching frequency of carbonyl on the (100) surface

John, P., Polwart, N., Troupe, C. E. & Wilson, J. I. B., 4 Jun 2003, In: *Journal of the American Chemical Society*. 125, 22, p. 6600-6601 2 p.

Nanocrystalline diamond films for nanotechnology applications

Forbes, I. S., Rabeau, J. R., Wilson, J. I. B. & John, P., 1 May 2003, In: *Materials Science and Technology*. 19, 5, p. 553-556 4 p.

Model Systems for Flavoenzyme Activity: Flavin-Functionalised SAMs as Models for Probing Redox Modulation through Hydrogen Bonding

Cooke, G., Duclairoir, F., John, P., Polwart, N. & Rotello, V. M., 2003, In: *Chemical Communications*. 9, 19, p. 2468-2469 2 p.

X-ray photoelectron spectroscopy studies of CVD diamond films

Fan, Y., Fitzgerald, A. G., John, P., Troupe, C. E. & Wilson, J. I. B., Aug 2002, In: *Surface and Interface Analysis*. 34, 1, p. 703-707 5 p.

Low temperature plasma chemical vapour deposition of carbon nanotubes

Wilson, J. I. B., Scheerbaum, N., Karim, S., Polwart, N., John, P., Fan, Y. & Fitzgerald, A. G., Mar 2002, In: *Diamond and Related Materials*. 11, 3-6, p. 918-921 4 p.

The cavity ring-down spectroscopy of C₂ in a microwave plasma

John, P., Rabeau, J. R. & Wilson, J. I. B., Mar 2002, In: *Diamond and Related Materials*. 11, 3-6, p. 608-611 4 p.

The oxidation of (100) textured diamond

John, P., Polwart, N., Troupe, C. E. & Wilson, J. I. B., Mar 2002, In: *Diamond and Related Materials*. 11, 3-6, p. 861-866 6 p.

The Cavity Ring-Down Spectroscopy in Microwave Plasmas

John, P. & Wilson, J. I. B., 2002, EPSRC. 8711 p.

Toward diamond lasers

John, P., 8 Jun 2001, In: *Science*. 292, 5523, p. 1847-1848 2 p.

Applied physics - Toward diamond lasers

John, P., 2001, In: *SIRS Enduring Issues. Science*. 292, p. 1847-1848 2 p.

High Resolution TEM Observation of CVD Diamond Films

Fitzgerald, A. G., Fan, Y.-C., Kisielowski, C., John, P., Troupe, C. E. & Wilson, J. I. B., 2001, *Electron microscopy and analysis 2001: proceedings of the Institute of Physics Electron Microscopy and Analysis Group Conference, University of Dundee, 5-7 September 2001*. Bristol: Institute of Physics, p. 39-42 4 p. (Institute of Physics conference series; no. 168).

Characterization of the surface morphology and electronic properties of microwave enhanced chemical vapor deposited diamond films

Fitzgerald, A. G., Fan, Y., John, P., Troupe, C. E. & Wilson, J. I. B., Nov 2000, In: *Journal Vacuum Science and Technology B*. 18, 6, p. 2714-2721 8 p.

Novel STM-based depth profiling technique for the electronic characterization of thin film materials

Fan, Y., Fitzgerald, A. G., Cairns, J. A., John, P., Troupe, C. E. & Wilson, J. I. B., 1 Aug 2000, In: *Applied Surface Science*. 162, p. 630-637 8 p.

Scanning Probe Microscopy and Spectroscopy of CVD Diamond Films

Fan, Y., Fitzgerald, A. G., John, P., Troupe, C. E. & Wilson, J. I. B., Apr 2000, In: *Microchimica Acta*. 132, 2-4, p. 435-441 7 p.

Study of the Interface Microstructures of CVD Diamond Films by TEM

Fitzgerald, A. G., Fan, Y., John, P., Troupe, C. E., Wilson, J. I. B., Tooke, A. O. & Storey, B. E., Apr 2000, In: *Microchimica Acta*. 132, 2-4, p. 315-321 7 p.

Dissociative Electron Attachment during the Laser Desorption of Anthracene Picrate

Hankin, S. M. & John, P., 1 Sep 1999, In: *Journal of Physical Chemistry A*. 103, 35, p. 6887-6890 4 p.

Microscopic cluster formation during the laser desorption of chrysene-d₁₂

Hankin, S. M. & John, P., 3 Jun 1999, In: *Journal of Physical Chemistry B*. 103, 22, p. 4566-4569 4 p.

Laser time-of-flight mass analysis of PAHs on single diesel particulates

Hankin, S. M. & John, P., 15 Mar 1999, In: *Analytical Chemistry*. 71, 6, p. 1100-1104 5 p.

Microstructural Studies of CVD Diamond Films by Transmission Electron Microscopy

Fitzgerald, A. G., Fan, Y., John, P., Troupe, C. E. & Wilson, J. I. B., 1999, p. 413-416. 4 p.

Diamond based glucose sensors

Troupe, C. E., Drummond, I., Graham, C., Grice, J., John, P. & Wilson, J. I. B., 1998, In: *Diamond and Related Materials*. 7, p. 575-580 6 p.

Micromachined pattern transfer into CVD diamond

Jubber, M. G., McLaughlin, A. J., Marsh, J. H., Aitchison, J. S., John, P., Troupe, C. E. & Wilson, J. I. B., 1998, In: *Diamond and Related Materials*. 7, 8, p. 1148-1154 7 p.

Optimisation of flared amplifier heatsinking by finite element analysis

Jubber, M. G., McIlvanney, K., McLaughlin, A. J., Marsh, J. H., Aitchison, J. S., Troupe, C. E., John, P. & Wilson, J. I. B., 1998, p. 90. 1 p.

Preface to the Proceedings of the 8th European Conference on Diamond, Diamond-like and Related Materials (Diamond 1997), jointly with the 4th International Conference on the Applications of Diamond Films and Related Materials, Edinburgh, August 3-8, 1997

Bonnet, A. M., Davis, R. F., John, P., Kamo, M., Lettington, A. H. & Zachai, R., 1998, In: Diamond and Related Materials. 7, No. 2-5

The surface morphology and characterisation of electronic properties of boron implanted microwave plasma CVD diamond films by atomic force and scanning tunneling microscopies

Fitzgerald, A. G., Fan, Y., John, P., Troupe, C. E. & Wilson, J. I. B., 1998, p. 332. 1 p.

Laser Time-of-Flight Mass Spectrometry of PAH-Picrate Complexes

Hankin, S. M., John, P. & Smith, G. P., 1 Aug 1997, In: Analytical Chemistry. 69, 15, p. 2927-2930 4 p.

Is Interfacial Silicon Carbide Necessary for the Epitaxy of Diamond on (100) Silicon?

John, P., Milne, D. K., Jubber, M. G. & Wilson, J. I. B., 1997, In: Chemical Vapor Deposition. 3, 1, p. 30-33 4 p.

The Heteroepitaxy of Diamond on (100) Silicon

John, P., 1997, p. 13-22. 10 p.

The Laser Mass Spectrometry of Anthracene Picrate

John, P. & Hankin, S. M., 1997, In: Analytical Chemistry. 69, p. 2927-2930 4 p.

The selective area deposition of diamond films

Roberts, P. G., Milne, D., John, P., Jubber, M. G. & Wilson, J. I. B., Dec 1996, In: Journal of Materials Research. 11, 12, p. 3128-3132 5 p.

Spatially Resolved Time-of-Flight Mass Spectrometry of Polycyclic Aromatic Hydrocarbons: Quantification Studies

Hankin, S. M., John, P., Simpson, A. W. & Smith, G. P., 15 Sep 1996, In: Analytical Chemistry. 68, 18, p. 3238-3243 6 p.

Growth of CVD diamond films over bio-medical materials

Morrison, N. A., Drummond, I., Garth, C., John, P., Milne, D., Smith, G. P., Jubber, M. G. & Wilson, J. I. B., Aug 1996, In: Diamond and Related Materials. 5, 10, p. 1118-1126 9 p.

An FTIR study of the heteroepitaxy of diamond on silicon

John, P., Graham, C., Milne, D., Jubber, M. G. & Wilson, J. I. B., Apr 1996, In: Diamond and Related Materials. 5, 3-5, p. 256-260 5 p.

Shallow angle x-ray diffraction from as-deposited diamond thin films

Rigden, J. S., Burke, T. M., Newport, R. J., Wilson, J. I. B., Jubber, M. G., Morrison, N. A. & John, P., Mar 1996, In: Journal of The Electrochemical Society. 143, 3, p. 1033-1037 5 p.

Matrix-assisted laser desorption/ionization mass spectrometry of pitch fractions separated by planar chromatography

Herod, A. A., Zhang, S. F., Carter, D. M., Domin, M., Cocksedge, M. J., Parker, J. E., Johnson, C. A. F., John, P., Smith, G. P., Johnson, B. R., Bartle, K. D. & Kandiyoti, R., 1996, In: Rapid Communications in Mass Spectrometry. 10, 2, p. 171-177 7 p.

The growth of CVD diamond films over biomedical materials

Morrison, N. A., Drummond, I., Garth, C., John, P., Milne, D., Smith, G. P., Jubber, M. G. & Wilson, J. I. B., 1996, In: Diamond and Related Materials. 5, p. 1118-1126 9 p.

Photo-oxidation of a-Si: C:H studied by in situ XPS

Ibrahim, F., Wilson, J. I. B. & John, P., Nov 1995, In: Journal of Non-Crystalline Solids. 191, 1-2, p. 200-204 5 p.

Atom beam treatment of diamond films

Jubber, M. G., Liehr, M., McGrath, J. L., Wilson, J. I. B., Drummond, I., John, P., Milne, D., McCullough, R. W., Geddes, J., Higgins, D. P. & Schlapp, M., 15 Apr 1995, In: *Diamond and Related Materials*. 4, 4, p. 445-450 6 p.

Epitaxy of diamond on silicon

Milne, D., Roberts, P. G., John, P., Jubber, M. G., Liehr, M. & Wilson, J. I. B., 15 Apr 1995, In: *Diamond and Related Materials*. 4, 4, p. 394-400 7 p.

Modelling of self-limiting laser ablation of rough surfaces: application to the polishing of diamond films

Tokarev, V. N., Wilson, J. I. B., Jubber, M. G., John, P. & Milne, D., 1 Apr 1995, In: *Diamond and Related Materials*. 4, 3, p. 169-176 8 p.

Molecular Mass Distributions of Coal Products Relevant to Pyrolysis, Liquefaction and Combustion

Bartle, K. D., Herod, A. A., John, P., Johnson, B. R., Johnson, C. A. F., Kandiyoti, R., Parker, J. E. & Smith, G. P., 1995, *Coal Science: Proceedings of the Eighth International Conference on Coal Science*. Vol. 24. p. 1435-1438 4 p.

An EELS and EXELFS study of amorphous hydrogenated silicon carbide

Cook, A., Fitzgerald, A. G., Ibrahim, F., Wilson, J. I. B. & John, P., Dec 1994, In: *Microchimica Acta*. 114-115, 1, p. 255-260 6 p.

Localized epitaxy of diamond on (100) silicon

John, P., Milne, D., Roberts, P. G., Jubber, M. G., Liehr, M. & Wilson, J. I. B., Dec 1994, In: *Journal of Materials Research*. 9, 12, p. 3083-3087 5 p.

Structural analysis of amorphous hydrogenated silicon-carbon thin films from silane/propane mixtures

Ibrahim, F., Wilson, J. I. B., John, P., Fitzgerald, A. G. & Cook, A., 1 Oct 1994, In: *Journal of Non-Crystalline Solids*. 175, 2-3, p. 195-203 9 p.

Characterization of coal by matrix-assisted laser desorption ionization mass spectrometry. I. The argonne coal samples

Herod, A. A., Li, C.Z., Parker, J. E., John, P., Johnson, C. A. F., Smith, G. P., Humphrey, P., Chapman, J. R., Kandiyoti, R. & Games, D. E., Oct 1994, In: *Rapid Communications in Mass Spectrometry*. 8, 10, p. 808-814 7 p.

Characterization of coal by matrix-assisted laser desorption mass spectrometry. II. Pyrolysis tars and liquefaction extracts from the argonne coal samples

Herod, A. A., Li, C.Z., Xu, B., Parker, J. E., Johnson, C. A. F., John, P., Smith, G. P., Humphrey, P., Chapman, J. R., Kandiyoti, R. & Games, D. E., Oct 1994, In: *Rapid Communications in Mass Spectrometry*. 8, 10, p. 815-822 8 p.

Characterization of kerogens by matrix-assisted laser desorption ionization mass spectroscopy

Li, C.Z., Herod, A. A., John, P., Johnson, C. A. F., Parker, J. E., Smith, G. P., Humphrey, P., Chapman, J. R., Rahman, M., Kinghorn, R. R. F., Kandiyoti, R. & Games, D. E., Oct 1994, In: *Rapid Communications in Mass Spectrometry*. 8, 10, p. 823-828 6 p.

Molecular masses up to 270 000 u in coal and coal-derived products by matrix assisted laser desorption ionization mass spectrometry (MALDI-m.s.)

John, P., Johnson, C. A. F., Parker, J. E., Smith, G. P., Herod, A. A., Li, C. Z., Humphrey, P., Chapman, J. R. & Kandiyoti, R., Oct 1994, In: *Fuel*. 73, 10, p. 1606-1616 11 p.

Design of a UHV reactor for microwave plasma deposition of diamond films

Jubber, M.G., Wilson, J.I.B., Drummond, I., John, P. & Milne, D., May 1994, In: *Vacuum*. 45, 5, p. 499-506 8 p.

IR attenuated total reflectance studies of d.c. biased growth of diamond films

John, P., Milne, D., Drummond, I., Jubber, M. G., Wilson, J. I. B. & Savage, J. A., Apr 1994, In: *Diamond and Related Materials*. 3, 4-6, p. 486-491 6 p.

The growth of (100) orientated diamond films

John, P., Milne, D., Vijayarajah, W. C., Jubber, M. G. & Wilson, J. I. B., Apr 1994, In: Diamond and Related Materials. 3, 4-6, p. 388-392 5 p.

Fundamental limits to growth rates in a methane-hydrogen microwave plasma

John, P., Drummond, I., Milne, D., Jubber, M. G. & Wilson, J. I. B., Jan 1994, In: Diamond and Related Materials. 3, 1-2, p. 56-60 5 p.

Analysis of nickel refinery dusts

Draper, M. H., Duffus, J. H., John, P., Metcalfe, L., Morgan, L., Parka, M. V. & Weitzner, M. I., 1994, In: Science of the Total Environment. 148, 2-3, p. 263-273 11 p.

Characterization of historical samples of nickel refinery dusts from the Clydach refinery

Draper, M. H., Duffus, J. H., John, P., Metcalfe, L., Morgan, L., Park, M. V. & Weitzner, M. I., 1994, In: Experimental and Toxicologic Pathology. 46, 2, p. 111-113 3 p.

Excimer Laser Polishing of Diamond Films: Model and Experiment

Tokarev, V. N., Wilson, J. I. B., Jubber, M. G., John, P. & Milne, D. K., 1994.

Laser-desorption mass spectrometry of standard polynuclear aromatic hydrocarbons and fullerenes

Herod, A. A., Stokes, B. J., Hancock, P., Kandiyoti, R., Parker, J. E., Johnson, C. A. F., John, P. & Smith, G., 1994, In: Journal of the Chemical Society, Perkin Transactions 2. 3, p. 499-506 8 p.

Laser photochemical deposition of gold from trialkylphosphine alkylgold(I) complexes

Davidson, J. L., John, P., Roberts, P. G., Jubber, M. G. & Wilson, J. I. B., 1994, In: Chemistry of Materials. 6, 10, p. 1712-1718 7 p.

Surface phosphidation of GaAs by the laser-induced dissociation of trimethylphosphine

Davidson, J. L., John, P., Roberts, P. G., Jubber, M. G. & Wilson, J. I. B., 1994, In: Applied Physics Letters. 65, 11, p. 1397-1399 3 p.

Photo-oxidation of a-Si: C : H films

Ibrahim, F., Wilson, J. I. B. & John, P., 2 Dec 1993, In: Journal of Non-Crystalline Solids. 164-166, PART 2, p. 1051-1054 4 p.

Identification of large molecular mass material in high temperature coal tars and pitches by laser desorption mass spectroscopy

Parker, J. E., Johnson, C. A. F., John, P., Smith, G. P., Herod, A. A., Stokes, B. J. & Kandiyoti, R., Oct 1993, In: Fuel. 72, 10, p. 1381-1391 11 p.

Identification of molecular masses up to 270 000 u in coal and coal-derived products by matrix-assisted laser desorption mass spectrometry

John, P., Johnson, C. A. F., Parker, J. E., Smith, G. P., Herod, A. A., Li, C. Z. & Kandiyoti, R., Sep 1993, In: Rapid Communications in Mass Spectrometry. 7, 9, p. 795-799 5 p.

Photo-ionisation threshold yields for the pulsed laser irradiation of diamond films at 266 nm

John, P., Milne, D., Smith, G. P., Jubber, M. G. & Wilson, J. I. B., Sep 1993, In: Diamond and Related Materials. 2, 11, p. 1430-1433 4 p.

Carbon clusters from coal-derived materials

Herod, A. A., Kandiyoti, R., Parker, J. E., Johnson, C. A. F., John, P., Smith, G. P. & Li, C. Z., May 1993, In: Rapid Communications in Mass Spectrometry. 7, 5, p. 360-362 3 p.

An X-ray photoelectron spectroscopy study of the surface layers between diamond crystallites and silicon substrate deposited by microwave-plasma-assisted chemical vapour deposition

Haq, S., Somerton, C., Tunnicliffe, D., Savage, J. A., John, P., Milne, D., Jubber, M. G. & Wilson, J. I. B., 31 Mar 1993, In: *Diamond and Related Materials*. 2, 2-4, p. 558-561 4 p.

Microwave plasma chemical vapour deposition of high purity diamond films

Jubber, M. G., Wilson, J. I. B., Drummond, I., John, P. & Milne, D., 31 Mar 1993, In: *Diamond and Related Materials*. 2, 2-4, p. 402-406 5 p.

The pyrolytic LCVD of high-purity gold tracks from alkyl (trialkylphosphine) gold(I) complexes

Davidson, J. L., John, P., Milne, D. K., Roberts, P. G., Jubber, M. G. & Wilson, J. I. B., Feb 1993, In: *Advanced Materials for Optics and Electronics*. 2, 1-2, p. 3-17 15 p.

Microwave plasma chemical vapour deposition of high purity diamond films

Jubber, M. G., Wilson, J. I. B., Drummond, I., John, P. & Milne, D., 1 Jan 1993, In: *Diamond and Related Materials*. 2, 2-4 pt 1, p. 402-406 5 p.

High mass compounds (up to 12000 u) in coal tars

Herod, A. A., Kandiyoti, R., Parker, J. E., Johnson, C. A. F., John, P., Smith, G. P. & Li, C. Z., 1993, In: *Journal of the Chemical Society, Chemical Communications*. 9, p. 767-769 3 p.

Identification of Large Molecular Mass Materials in Coal and Coal Derived Liquids

Herod, A. A., Parker, J. E., Johnson, C. A. F., John, P., Smith, G. P., Li, C-Z. & Kandiyoti, R., 1993.

Large Molecular Masses in Coal

Herod, A. A., Parker, J. E., Johnson, C. A. F., John, P., Smith, G. P., Li, C-Z., Kandiyoti, R. & Humphrey, P., 1993, p. 211-213. 3 p.

Attenuated Total Reflectance Infrared Absorption in CVD Diamond Films

John, P., Milne, D. K., Drummond, I., Wilson, J. I. B., Jubber, M. G. & Savage, J. A., 20 Nov 1992, *PROCEEDINGS VOLUME 1759 SAN DIEGO '92 | 22-22 JULY 1992 Diamond Optics V*. SPIE, Vol. 1759. p. 209 9 p.

A microbeam analytical characterization of diamond films

Cook, A., Fitzgerald, A. G., Storey, B. E., Wilson, J. I. B., John, P., Jubber, M. G., Milne, D., Drummond, I., Savage, J. A. & Haq, S., 15 Apr 1992, In: *Diamond and Related Materials*. 1, 5-6, p. 478-485 8 p.

High mass material ($>10^4$ daltons) in a coal liquefaction extract, by laser-desorption mass spectrometry

John, P., Johnson, C. A. F., Parker, J. E., Smith, G. P., Herod, A. A., Gaines, A. F., Li, C. Z. & Kandiyoti, R., Aug 1991, In: *Rapid Communications in Mass Spectrometry*. 5, 8, p. 364-367 4 p.

The characterization of ultra-hard carbon films produced from pre-processed carbon powder in a hybrid physical vapor deposition system

Tither, D., Dehbi, A., Holiday, P., Matthews, A., Fitzgerald, A. G., Henderson, A. E., Storey, B. E., Dines, T. J., John, P. & Wilson, J. I. B., 1990, In: *Carbon*. 28, 5, p. 641-655 15 p.

Photo-oxidation of amorphous silicon-carbon alloys and its use in field effect transistors

Wilson, J. I. B., Qayyum, A., Al-Sabbagh, S., Jubber, M. & John, P., 3 Dec 1989, In: *Journal of Non-Crystalline Solids*. 115, 1-3, p. 84-86 3 p.

Laser writing of high purity gold tracks

Jubber, M., Wilson, J. I. B., Davidson, J. L., Fernie, P. A. & John, P., 2 Dec 1989, In: *Applied Surface Science*. 43, 1-4, p. 74-80 7 p.

A perspective on Japanese patents on hard carbon/ diamond films and related subjects 1967-1987

Tither, D., Matthews, A., John, P. & Wilson, J. I. B., Oct 1989, In: Surface and Coatings Technology. 38, 1-2, p. 251-266
16 p.

High spatial resolution photo-oxidation of a-Si: C:H films at low temperatures

John, P., Qayyum, A. & Wilson, J. I. B., 6 Jul 1989, In: Electronics Letters. 25, 14, p. 930-932 3 p.

Diamond Films

John, P. & Wilson, J. I. B., 1989

Laser writing of high-purity gold lines

Jubber, M., Wilson, J. I. B., Davidson, J. L., Fernie, P. A. & John, P., 1989, In: Applied Physics Letters. 55, 14, p. 1477-1479 3 p.

Laser Writing of High Purity Gold Lines

Jubber, M., Wilson, J. I. B., Davidson, J. L., John, P. & Roberts, P. G., 1989, In: MRS Online Proceedings Library. 158, 129.

LASER 'DIRECT WRITING' OF SILICON pn JUNCTIONS.

Milne, D., Black, A., Wilson, J. I. B. & John, P., 7 Jan 1988, In: Electronics Letters. 24, 1, p. 19-20 2 p.

Industrial application of diamond coatings

John, P. & Wilson, J. I. B., 1988, In: Sprechsaal. 121, 11, p. 1096-1097 2 p.

Chemical Vapour Deposition

John, P., 1987, *The Chemistry in the Semiconductor Industry*. Blackie

Plasma Enhanced Chemical Vapour Deposition

John, P. & Jones, B. L., 1987, *Chemistry in the Semiconductor Industry*. Blackie

Identification of Crude Oils by Luminescence Techniques

John, P. & Soutar, I., Oct 1986, In: Proceedings of the Analytical Division of the Chemical Society. p. 309-310 2 p.

Time-resolved lif detection of silylene in the IR MPD of ethylsilane

Rayner, D. M., Steer, R. P., Hackett, P. A., Wilson, C. L. & John, P., 24 Jan 1986, In: Chemical Physics Letters. 123, 5, p. 449-452 4 p.

LASER DEPOSITION OF ALUMINIUM.

Cross, D., John, P., Milne, D. & Wilson, J. I. B., 1986, In: IEE Colloquium (Digest). 1986 /129, p. 3. 1-3. 4

LASER DEPOSITION OF DOPED SILICON.

Milne, D., Wilson, J. I. B., Black, A. & John, P., 1986, In: IEE Colloquium (Digest). 1986 /129, p. 4. 1-4. 3

LASER DEPOSITION OF SILICON CARBIDE ALLOYS.

Black, A., Wilson, J. I. B., John, P. & Milne, D., 1986, In: IEE Colloquium (Digest). 1986 /129, p. 6. 1-6. 2

Structure and H Bonding in Device Quality a-Si:H

John, P. & Wilson, J. I. B., 1985, *Tetrahedrally-Bonded Amorphous Semiconductors*. Springer, p. 107-115 9 p. (Institute for Amorphous Studies Series).

Infrared multiphoton dissociation of unsubstituted metal carbonyls at 5 μm

Au, M-K., Hackett, P. A., Humphries, M. & John, P., Jan 1984, In: Applied Physics B Photophysics and Laser Chemistry. 33, 1, p. 43-49 7 p.

Frequency Doubled CO_2 Laser Induced Decomposition of Carbonyl Compounds: Cyclobutanone

Au, M-K., Hackett, P. A., Humphries, M. R. & John, P., 1984, In: Laser Chemistry. 4, 562973.

Optical recording in hydrogenated amorphous silicon

John, P. & Jones, B. L., 1984, In: Applied Physics Letters. 45, 1, p. 39-41 3 p.

Raman scattering from pristine and oxidized polysilanes

Vora, P., Solin, S. A. & John, P., 1984, In: Physical Review B: Condensed Matter. 29, 6, p. 3423-3429 7 p.

Thermal dehydrogenation of polysilane

John, P., Cowie, B. C. & Odeh, I. M., 1984, In: Philosophical Magazine B. 49, 6, p. 559-564 6 p.

Real-time multiphoton ionization detection of iodine atoms produced by infrared multiphoton dissociation of perfluoroalkyl iodides

Hackett, P. A., John, P., Mayhew, M. & Rayner, D. M., 1 Apr 1983, In: Chemical Physics Letters. 96, 2, p. 139-142 4 p.

Multiphoton ionization spectroscopy of Al_2Me_6 : Detection of the np^2P_J and nf^2F_J Rydberg states of aluminium

Hackett, P. A. & John, P., 1983, In: Journal of Chemical Physics. 79, 7, p. 3593-3595 3 p.

Nonequilibrated energy distribution in polyatomic molecules: The infrared MPD of cyclobutanone

John, P., Humphries, M. R., Harrison, R. G. & Harper, P. G., 1983, In: Journal of Chemical Physics. 79, 3, p. 1353-1359 7 p.

The electrical conductivity of polysilane, $(\text{SiH}_2)_x$

John, P., Odeh, I. M. & Wood, J., 1983, In: Journal of the Chemical Society, Chemical Communications. 24, p. 1496-1497 2 p.

Laser chemical physics II: Infrared multiple photon dissociation

de Martino, A., Abram, I., Frey, R., Pradere, F., Schröder, H., Lamprecht, H., Kompa, K. L., Simpson, T. B., Tsao, J. Y., Burak, I., Bloembergen, N., Stephenson, J. C., Chang-lin, L., Blazy, J. A., King, D. S., Borsella, E., Fantoni, R., Giardini-Guidoni, A., Cantrell, C. D., Francisco, J. S. & 26 others, Qingshi, Z., Steinfeld, J. I., Gilbert, G., Harper, P. G., Harrison, R. G., Humphries, M. R., John, P., Reisler, H., Kong, F., Wittig, C., Cox, D. M., Horsley, J. A., Kaldor, A., Dietz, T. G., Duncan, M., Smalley, R. E., Rabinowitz, P., Gnauck, A., Koren, G., Gertner, Y., Shreter, U., Bergman, R. C., Homicz, G., Williams, M. J., Wolk, G. & Rich, J. W., Jun 1982, In: Applied Physics B: Photophysics and Laser Chemistry. 28, 2-3, p. 180-189 10 p.

A reassessment of the vibrational spectrum of hydrogenated amorphous silicon

John, P., Odeh, I. M. & Thomas, M. J. K., Jan 1982, In: Solid State Communications. 41, 4, p. 341-344 4 p.

Fluorescence cell design and use to determine crude oil in water

John, P., McQuat, E. R. & Soutar, I., 1982, In: Analyst. 107, 1271, p. 221-223 3 p.

Infrared lasers in chemistry

John, P., 1982, In: Journal of Chemical Education. 59, 2, p. 135-141 7 p.

Oil Spill Analysis by Luminescence Techniques

John, P. & Soutar, I., 1982, *Petroanalysis '81: Advances in Analytical Chemistry in the Petroleum Industry, 1975-1982*. Wiley

Preparation and Properties of Polysilane: Model Compounds for Hydrogenated a-Si

John, P., Odeh, I. M., Thomas, M. J. K. & Wilson, J. I. B., Oct 1981, In: Journal De Physique Colloques. 42, C4, p. 651-654 4 p.

A luminescence approach to the analysis of oil spills

John, P. & Soutar, I., Aug 1981, In: International Environment and Safety. 48, p. 48-51

Infrared Band Assignments in Oxidised Hydrogenated a-Si Films

John, P., Odeh, I. M., Thomas, M. J. K., Tricker, M. J. & Wilson, J. I. B., Jun 1981, In: physica status solidi (b). 105, 2, p. 499-505 7 p.

Physical degradation of a-Si films on thermal treatment: a scanning electron microscope study

John, P., Odeh, I. M., Thomas, M. J. K., Tricker, M. J., Wilson, J. I. B. & Dhariwal, R. S., May 1981, In: Journal of Materials Science. 16, 5, p. 1305-1309 5 p.

Studies of the Oscillator Strengths of Infrared Vibrational Modes in Glow-Discharge Hydrogenated Amorphous Silicon

John, P., Odeh, I. M., Thomas, M. J. K., Tricker, M. J. & Wilson, J. I. B., Apr 1981, In: physica status solidi (b). 104, 2, p. 607-612 6 p.

Silicon-Hydrogen Stretching Modes in Amorphous Silicon. A Semi-Empirical Calculation of the Infrared Band Widths

John, P., Odeh, I. M., Thomas, M. J. K., Tricker, M. J. & Wilson, J. I. B., 1 Feb 1981, In: physica status solidi (b). 103, 2, p. K141-K146 6 p.

Assessment of phosphorescence spectroscopy for crude oil identification

Corfield, M. M., Hawkins, H. L., John, P. & Soutar, I., 1981, In: Analyst. 106, 1259, p. 188-197 10 p.

Determination of the hydrogen content of a-Si films by infrared spectroscopy and 25 MeV α -particle elastic scattering

John, P., Odeh, I. M., Thomas, M. J. K., Tricker, M. J., Wilson, J. I. B., England, J. B. A. & Newton, D., 1981, In: Journal of Physics C: Solid State Physics. 14, 3, p. 309-318 10 p., 014.

Non-thermal decomposition of cyclobutanone by IR multiple-photon excitation

John, P., Humphries, M. R., Harrison, R. G., Mackie, I. & Harper, P., 1981, In: Journal of Photochemistry. 17, 1, p. 58-59 2 p.

Oil Spill: The Role of Luminescence Techniques

John, P. & Soutar, I., 1981, In: Chemistry in Britain. 17, 6, p. 268-278 11 p.

Regiospecific addition of 1,1-dimethylsilaethene to a silicon-oxygen bond

John, P., Gowenlock, B. G. & Groome, P., 1981, In: Journal of the Chemical Society, Chemical Communications. 15, p. 806-807 2 p.

The photolysis of 1,1-dimethylsilacyclobutane in the gas phase

Low, H. C. & John, P., 25 Nov 1980, In: Journal of Organometallic Chemistry. 201, 2, p. 363-369 7 p.

The hydrogen and oxygen content of self-supporting carbon foils prepared by dc glow discharge in ethylene

Tait, N. R. S., Tolfree, D. W., John, P., Odeh, I. M., Thomas, M. J. K., Tricker, M. J., Wilson, J. I. B., England, J. B. A. & Newton, D., 15 Oct 1980, In: Nuclear Instruments and Methods. 176, 3, p. 433-438 6 p.

The absorption of pulsed infrared radiation by cyclobutanone and its subsequent decomposition

Harrison, R. G., Hawkins, H. L., Leo, R. M. & John, P., 15 Mar 1980, In: Chemical Physics Letters. 70, 3, p. 555-559 5 p.

Thermal dehydrogenation of glow discharge a-Si

John, P., Odeh, I. M., Thomas, M. J. K., Tricker, M. J., McGill, J., Wallace, A. & Wilson, J. I. B., Jan 1980, In: Journal of Non-Crystalline Solids. 35-36, PART 1, p. 237-241 5 p.

Absorption measurements by pulsed optoacoustic detection

Leo, R. M., Hawkins, H. L., John, P. & Harrison, R. G., 1980, In: Journal of Physics E: Scientific Instruments. 13, 6, p. 658-660 3 p., 015.

Multiple Photon Decomposition of Molecules with Double Reaction Pathways

Harrison, R. G., Hawkins, H. L., John, P. & Leo, R. M., 1980, In: Journal of the Optical Society of America. 70

Studies of the mechanism of the decomposition of hydrogenated a-Si films

John, P., Odeh, I. M., Thomas, M. J., Tricker, M. J., Riddoch, F. & Wilson, J. I., 1980, In: Philosophical Magazine B. 42, 5, p. 671-681 11 p.

Thermal degradation of hydrogenated carbon films prepared by glow discharge in ethylene

John, P., Thomas, M. J. K., Tricker, M. J., Tait, N. R. S. & Tolfree, D. W. L., 1980, In: Carbon. 18, 5, p. 372-373 2 p.

Chemical thermometers in megawatt infrared laser chemistry: The decomposition of cyclobutanone sensitized by ammonia

Steel, C., Starov, V., Leo, R., John, P. & Harrison, R. G., 15 Mar 1979, In: Chemical Physics Letters. 62, 1, p. 121-124 4 p.

Excitation of Ammonia in the Megawatt Region Using a CO₂ Laser

Starov, V., Steel, C., Butcher, S., Harrison, R. G., John, P. & Leo, R., 1979, *Laser-Induced Processes in Molecules*. Springer, p. 201-204 4 p. (Springer Series in Chemical Physics; vol. 6).

Infrared Laser Multiphoton Dissociation of Cyclobutanone

Harrison, R. G., Hawkins, H. L., John, P. & Leo, R., 1979.

IR Laser Sensitised Chemical Reactions of Polyatomic Molecules

Steel, C., Starov, V., John, P., Harrison, R. G. & Leo, R., 1979, *Laser-Induced Processes in Molecules*. Springer, p. 198-200 3 p. (Springer Series in Chemical Physics; vol. 6).

Thermal Dehydrogenation of Glow Discharge a-Si:H

John, P., Odeh, I. M., Thomas, M. J. K., Tricker, M. J., McGill, J., Wallace, A. & Wilson, J. I. B., 1979, *Amorphous and liquid semiconductors : proceedings of the Internat. Conference on Amorphous and Liquid Semiconductors : Cambridge, Ma, Aug. 27-31, 1979*. Amsterdam: North-Holland Publ Co

Saturation of the a(6, 0) transition in the v₂ band of NH₃ by irradiation with a teal CO₂ laser

Gowenlock, B. G., John, P., Leo, R., Harrison, R. G., Butcher, S. & Steel, C., 1978, In: Journal of Photochemistry. 9, 2, p. 200-204 5 p.

Analysis in the energy industries

Sinclair, V. M., Goodfellow, G. I., Wilkinson, H. C., Quayle, A., Bartle, K. D., Lee, M. L., Novotny, M., Gamage, C. F., John, P. & Soutar, I., 1976, In: Proceedings of the Analytical Division of the Chemical Society. 13, 10, p. 295-310 16 p.

Identification of crude oils by synchronous excitation spectrofluorimetry

John, P. & Soutar, I., 1976, In: Analytical Chemistry. 48, 3, p. 520-524 5 p.

Studies in vacuum ultra-violet photolysis Part V: The photolysis of cyclobutanone at 147.0 nm and 123.6 nm in the gas phase

Gowenlock, B. G., John, P. & Johnson, C. A. F., 1974, In: Journal of Photochemistry. 3, 1, p. 45-54 10 p.

Arrhenius parameters for silene insertion reactions

John, P. & Purnell, J. H., 1973, In: Journal of the Chemical Society, Faraday Transactions 1: Physical Chemistry in Condensed Phases. 69, p. 1455-1461 7 p.

Chemical reactions of excited iodine atoms

John, P., Kennedy, G. J. & Gowenlock, B. G., 1973, In: Journal of the Chemical Society, Chemical Communications. 18, p. 683a

The absolute entropies of SiH_2 and SiH_3

John, P. & Purnell, J. H., 1 Jun 1971, In: Journal of Organometallic Chemistry. 29, 2, p. 233-236 4 p.