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Academic (Teaching & Research) Professor
EEE - Academic & Research
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Employment

Chair in Agri-Sensors and Electronics

Academic (Teaching & Research) Professor
EEE - Academic & Research
The University of Manchester
1 Aug 2019 → present

Chair in Agri-Sensors and Electronics

Academic (Teaching & Research) Professor
School of Electrical & Electronic Engineering
1 Mar 2016 → 31 Jul 2019

Senior Research Fellow

Senior Research Fellow
School of Electrical & Electronic Engineering
2 Jan 2007 → 29 Feb 2016

Manchester Environmental Research Institute

The University of Manchester
2 Jul 2018 → present

Master of Philosophy, MPhil Business Administration

Alliance Manchester Business School
The University of Manchester
19 Sep 2005 → 25 Sep 2008

BBSRC Agriculture and Food Security Strategy Panel

Biotechnology & Biological Sciences Research Council (BBSRC)
Swindon, United Kingdom
31 Oct 2016 → 31 Oct 2019

Research output

Development of a Passive Spore Sampler for Capture Enhancement of Airborne Crop Pathogens

Blackhall, J., Wang, J., Nabawy BSc, MSc, PhD, MRAeS, SMAIAA, FHEA, M., Quinn, M. & Grieve, B., 18 Jun 2020, In : Fluids. 5, 97, 14 p.
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High Speed Crop and Weed Identification in Lettuce Fields for Precision Weeding

Elstone, L., How, K. Y., Brodie, S., Zulfahmi Ghazali, M., Heath, W. & Grieve, B., 14 Jan 2020, In : Sensors. 20, 455, 15 p.
DOI: doi:10.3390/s20020455

The challenges posed by global broadacre crops in delivering smart agri-robotic solutions: A fundamental rethink is required

Grieve, B., Duckett, T., Collison, M., Boyd, L., West, J., Yin, H., Arvin, F. & Pearson, S., Dec 2019, In : Global Food Security. 23, p. 116-124 9 p.

DOI: 10.1016/j.gfs.2019.04.011

Electrical impedance tomography as a tool for phenotyping plant roots

Corona López, D., Sommer, S., Rolfe, S., Podd, F. & Grieve, B., 2019, In : Plant Methods. p. 1-15 15 p.

DOI: 10.1186/s13007-019-0438-4

Multispectral imaging for presymptomatic analysis of light leaf spot in oilseed rape

Veys, C., Chatziavgerinos, F., Bin Ghaith Alsuwaidi, A. R. S. A., Hibbert, J., Hansen, M., Bernotas, G., Smith, M., Yin, H., Rolfe, S. & Grieve, B., 2019, In : Plant Methods. 15, 40, p. 1-12 12 p., 4.

DOI: 10.1186/s13007-019-0389-9

A method for real-time classification of insect vectors of mosaic and brown streak disease in cassava plants for future implementation within a low-cost, handheld, in-field multispectral imaging sensor

Fennell, J., Veys, C., Jose, D., Nwezeobi, J., van Brunscot, S., Colvin, J. & Grieve, B., 20 Sep 2018, In : Plant Methods. 14, 82, p. 1-12 12 p.

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Combining Spectral and Texture Features in Hyperspectral Image Analysis for Plant Monitoring

AlSuwaidi, A., Grieve, B. & Yin, H., 23 Aug 2018, In : Measurement Science and Technology. 29, 10

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Agricultural Robotics: The Future of Robotic Agriculture

Duckett, T., Pearson, S., Blackmore, S. & Grieve, B., 21 Jun 2018, London: EPSRC UK Robotics and Autonomous Systems (RAS) Network. 36 p.

Low-cost Turbidity Sensor for Low-power Wireless Monitoring of Fresh-Water Courses

Wang, Y., Rajib, S. M. S. M., Collins, C. & Grieve, B., 1 Jun 2018, In : IEEE Sensors Journal. 18, 11, p. 4689-4696 8 p.

DOI: 10.1109/JSEN.2018.2826778

Photometric stereo for three-dimensional leaf venation extraction

Zhang, W., Hansen, M., Smith, M., Smith, L. & Grieve, B., Jun 2018, In : Computers in Industry. 98, p. 56-67 12 p.

DOI: 10.1016/j.compind.2018.02.006

Towards on-farm pig face recognition using convolutional neural networks

Hansen, M., Smith, M., Smith, L., Salter, M. G., Baxter, E. M., Farish, M. & Grieve, B., Jun 2018, In : Computers in Industry. 98, p. 145-152

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Towards Phosphate Detection in Hydroponics Using Molecularly Imprinted Polymer Sensors

Storer, C., Coldrick, Z., Tate, D., Donoghue, J. & Grieve, B., 10 Feb 2018, In : Sensors. 18, 2, p. 531 11 p.

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Feature-Ensemble Based Novelty Detection for Analysing Plant Hyperspectral Datasets

AlSuwaidi, A., Grieve, B. & Yin, H., 2018, In : IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing. 11, 4, p. 1 15 p., 99.

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An Ultra-Low-Cost Active Multispectral Crop Diagnostics Device

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Floor Sensors of Animal Weight and Gait for Precision Livestock Farming

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Portable, In-field, Multispectral Imaging Sensor for Real-time Detection of Insect Viral-Vectors

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DOI: 10.1109/ICSENS.2017.8234206

Unsupervised Learning for Spectral Data Analysis as a Novel Sensor for Identifying Rodent Infestation in Urban Environments

Costilla Reyes, O., Coldrick, Z. & Grieve, B., 6 Nov 2017, p. 993. 995 p.

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Spectral-texture approach to hyperspectral image analysis for plant classification with SVMs

AlSuwaidi, A., Grieve, B. & Yin, H., 1 Oct 2017, *2017 IEEE International Conference on Imaging Systems and Techniques (IST)*. p. 1-6 6 p.

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Towards Spectral-Texture Approach to Hyperspectral Image Analysis for Plant Classification

AlSuwaidi, A., Grieve, B. & Yin, H., 2017, *Intelligent Data Engineering and Automated Learning -- IDEAL 2017*. Yin, H., Gao, Y., Chen, S., Wen, Y., Cai, G., Gu, T., Du, J., Tallón-Ballesteros, A. J. & Zhang, M. (eds.). Cham: Springer Nature, p. 251-260 10 p. (Lecture Notes in Computer Science; vol. 10585).

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Alsuwaidi, A., Veys, C., Hussey, M., Grieve, B. & Yin, H., 10 Nov 2016, *IEEE International Conference on Imaging Systems and Techniques*. Chania, Greece: IEEE, 6 p.

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Hyperspectral Feature Selection Ensemble for Plant Classification

AlSuwaidi, A., Veys, C., Hussey, M., Grieve, B. & Yin, H., 2016. 4 p.

Supplemental Blue LED Lighting Array to Improve the Signal Quality in Hyperspectral Imaging of Plants

Mahlein, A. K., Hammersley, S., Oerke, E. C., Dehne, H. W., Goldbach, H. & Grieve, B. G., 1 Jun 2015, In : *Sensors*. 15, p. 12834-12840 6 p.

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Sensor

Gleeson, H., Dierking, I., Grieve, B., Woodyatt, C. & Brimicombe, P., 28 Apr 2015

Localized Multispectral Crop Imaging Sensors Engineering & Validation of a Cost Effective Plant Stress and Disease Sensor

Grieve, B., Gurkan, D. (ed.) & Baglio, S. (ed.), 11 Apr 2015, *IEEE 2015 Sensors Applications Symposium*. Gurkan, D. & Baglio, S. (eds.). Piscataway, New Jersey, USA: IEEE

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Handheld multispectral imager for crop disease sensing

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Process compliant electrical impedance instrumentation for wide scale exploitation on industrial vessels

Lionheart, W., Grieve, B., Davidson, J. L. & Mann, R., 2015, In : *Proc. 3rd World Congr. Industrial Process Tomography*. p. 2-5

Minimizing flight time and fuel consumption for airborne crop spraying

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Electrical impedance imaging of water distribution in the root zone

Newill, P., Karadaglić, D., Podd, F., Grieve, B. D., York, T. A. & Karadaglić, D., 2014, In : *Measurement Science and Technology*. 25, 5, 055110.

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Modelling of Likely Sclerotinia Disease Incidence in Oilseed rape Fields in the United Kingdom

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Processing online crop disease warning information via sensor networks using ISA ontologies

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POF based moisture and pH sensor in soils for e-Agriculture applications.

Fiadzomor, P., Hamza, B., Scully, P., Benyezzar, M., Qiao, C., Vaughan, J., Grieve, B., Ozanyan, K. & Pearson, D., 4 Sep 2012, *Proceeding of Photon12*. London, UK: Institute of Physics

Capacitively-coupled impedance measurements for ERT

Hayes, R., Podd, F., Newill, P., Grieve, B. & York, T., 26 Mar 2012, *6th International Symposium on Process Tomography*. 7 p. (International Symposium on Process Tomography).

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Sensing Method and Apparatus for Detecting Plant Nodes

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A specific, robust, and automated method for routine at-line monitoring of the concentration of cellulases in genetically modified sugarcane plants

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Developing new technology platforms for new business models: Syngenta's partnership with the University of Manchester

Malik, K., Georghiou, L. & Grieve, B., Jan 2011, In : *Research Technology Management*. 54, 1, p. 24-31 7 p.

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Distributed polymer optical fibre sensing of moisture and pH in soils: Feasibility for e-agriculture

Qiao, C., Fiadzomor, P., Hamza, B., Scully, P., Benyezzar, M., Grieve, B., Ozanyan, K. & Pearson, D., 2011, *POF 2011: 20th International Conference on Plastic Optical Fibers - Conference Proceeding/POF: Int. Conf. Plast. Opt. Fibers - Conf. Proc.*. Bilbao, Spain, p. 557-562 5 p.

Isotachophoresis-based sample preparation of cellulases in sugarcane juice using bovine serum albumin as a model protein

Gupta, R., Baldock, S. J., Fielden, P. R., Prest, J. E. & Grieve, B. D., 17 Dec 2010, In : *Journal of Chromatography A*. 1217, 51, p. 8026-8031 5 p.

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Distributed Polymer Optical Fibre Sensing of Moisture and pH in soils: Feasibility for e-Agriculture

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Sensor

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Exploiting Sensors & ICT to "Change the Rules of the Game" for Global Agriculture and Food Security

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Grieve, B. D., Bushell, M. & Lant, M., 28 Apr 2010.

An accessible electrical impedance tomograph for 3D imaging

Grieve, B. D., Murphy, S., Burnett-Thompson, A. & York, T. A., 2010, In : *Transactions of the Institute of Measurement and Control*. 32, 1, p. 31-50 19 p.

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An investigation into the use of a mixture model for simulating the electrical properties of soil with varying effective saturation levels for sub-soil imaging using ECT

Hayes, R. R., Newill, P. A., Podd, F. J. W., York, T. A., Grieve, B. D. & Dorn, O., 2010, In : *Journal of Physics: Conference Series (Print)*. 255, 1, 012002.

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An investigation into the use of a mixture model for simulating the electrical properties of soil with varying effective saturation levels for sub-soil imaging using ECT

Hayes, R. R., Newill, P. A., Podd, F. J. W., York, T. A., Grieve, B. D. & Dorn, O., 2010, *Journal of Physics: Conference Series/J. Phys. Conf. Ser.*. Institute of Physics Publishing Ltd, Vol. 255. 15 p.

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Investigation of PCB microstrip patch receiving antenna for outdoor RF energy harvesting in wireless sensor networks

Sim, Z. W., Shuttleworth, R. & Grieve, B., 8 Dec 2009, *Loughborough Antennas and Propagation Conference, LAPC 2009 - Conference Proceedings/Loughborough Antennas Propag. Conf., LAPC - Conf. Proc.*. IEEE, p. 129-132 3 p.

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Holmes, R. J., Summersgil, P., Ryan, T., Brown, B. J. T., Mockbil, A., Grieve, B. D. & Fielden, P. R., Aug 2009, In : *Journal of Food Science*. 74, 6, p. N37-N43

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Affordable sensors to support food provision

Grieve, B., Jun 2009, In : *Food Science and Technology*. 23, 2, p. 29-31 2 p.

Changing the rules of the game for future agriculture, the university innovation centre (UIC) model

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Methods and Systems for Ad-hoc Sensor Network

Grieve, B. D., Wright, P. & Green, P. R., 18 Sep 2008, Patent No. WO2008063939

System for Distributing Perishable Goods

Grieve, B. D. & Waltham, M., 24 Jul 2008, Patent No. WO2008087396

Plant Images

Grieve, B., Dalton, I. P. G. B. D. & Weiss, M., 5 Jun 2008, Patent No. WO2008065355

Pest Detector

Grieve, B. D., Wright, P., Hoppe, M. & Sawafta, R., 29 May 2008, Patent No. WO2008110801

Regression analysis for supply chain logged data: A simulated case study on shelf life prediction

Doan, X. T., Kidd, P. T., Goodacre, R. & Grieve, B. D., 2008, *International Conference on Signal Processing Proceedings, ICSP/Int Conf Signal Process Proc.* IEEE, p. 2717-2720 3 p.

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Towards process tomography for monitoring pressure filtration

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On-line Electrical Impedance Tomography for Industrial Batch Processing

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Foresight Sensors Task Force; A strategic framework for 2015

McGeehin, P., Deacon, J., Gardner, J., Grieve, B. D., Holdaway, R., Jones, R., Prosser, S. & Whitaker, G., 2002, Department of Trade and Industry .

Method for Monitoring Chemical Processes

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Detecting filter-cake pathologies in solid-liquid filtration: Semi-tech scale demonstrations using electrical resistance tomography (ERT)

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Monitoring System

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Fluid Transfer Apparatus

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