

Professor Marcian CIRSTEA MEng, PhD, PGCTL, CEng, FIET, SMIEEE – CV & Publications

Address: Anglia Ruskin University, Computing & Technology Department, Science & Technology Faculty, East Road, Cambridge, CB1 1PT, UK. [REDACTED]

Professional profile: university professor, with 14 years of management experience and 26 years research and teaching experience in: digital systems, Artificial Intelligence, Hardware Description Languages (VHDL), system-on-chip design (FPGA), Computer Aided Design, electronic system modelling/simulation.

Google Scholar profile: ***h-index: 18; i10-index: 30; Citations: 2,531 – 29 July 2018.***

Present Employment: **Professor and Head of Department of Computing and Technology, Anglia Ruskin University, Cambridge, UK**
(employed as Principal Lecturer in September 2004, Professor since April 2007).

Teaching: Digital Systems, Hardware Description Languages, FPGAs, Microelectronics, Power converters

Research: Digital control, Artificial Intelligence (Neural Networks / Fuzzy Logic), computer aided design tools & methods applied to digital systems modelling and rapid prototyping, Field Programmable Gate Arrays (FPGAs), Hardware Description Languages (VHDL) for control algorithm design/implementation.

Supervised to completion: 8 PhDs + 4 MPhils: Intelligent Fuzzy Logic Control of Generators (1999, Jeen Khor), Neural PWM Adaptive FPGA Controller for Sensorless Induction Motor Drives (2000, Andrei Dinu), Advanced FPGA Control System for Diesel Driven PM Generators (2001, Yanting Hu), Reusable VHDL Architectures for Induction Motor Vector Control Implemented in FPGA (2002, Abdulmagid Aounis), Aligning Music Genre Taxonomies (2007, Christopher Mitchell), Web Services for the disabled (2008, Mukhtar Rana), Mathematical Modelling of Semiconductor Devices (Junior Barrett, 2014), Innovative concept of strong type-checking computer system for enhanced software reliability (Jonathan Kimmitt, 2015), Design of a FPGA Controlled 6-pulse Rectifier (1998, Marie Giamusi), Holistic Modelling & Analysis of a Stand Alone Power System (2003, Abdebaset Zreghe), Integrated Renewable Energy Systems Modelling (2009, Alberto Parera), Digital Temperature Controller Design for explosive atmospheres (2016, Erik Pertot). Supervised many MSc and final year projects.

Currently supervisor for: 1 PhD: Conceptual Development of a Novel Digital Controller for Optimised Operation of a Hybrid Renewable Energy System (2018, John Darvill, viva passed 24 May 2018).

Research internal examiner: **5 PhDs:** 05.1998, 03.2003, 05.2003, 10.2003, 01.2004, **1 MPhil:** 11.1997.

Research external examiner:

- **8 PhDs:** i) 12.03.2007: Brunel University, UK, ii) 06.12.2007 University of Cergy-Pontoise, Paris (viva held in French, Tunis, Tunisia), iii), iv) 27.04.2009 and 07.05.2012 at National Institute of Applied Sciences (INSA), Lyon, France, v) 24.11.2010 University of Cergy-Pontoise, Paris, France, vi)+vii) 12.10.2012, Cluj-Napoca, Romania, viii) 19.12.2014 University of Leicester, UK.
- **2 MPhils:** 24.11.2004, 15.06.2005 both at Nottingham Trent University, UK.
- **7 participations** (2000 – 2012) to PhD examination panels (Romania) as referee through reports.

CAD / programming skills: Xilinx ISE, VHDL, Modelsim, Mentor Graphics, Viewlogic, FoxPro, MS Office.

Positions of responsibility, professional bodies membership and prestige

- * **Vice-President for Membership Activities** – IEEE Industrial Electronics Society, 2013-14, 2015-16.
- * **Member of Administrative Committee (AdCom) of IEEE Industrial Electronics Society**, 2005-2016.
- * **Associated Editor of IEEE since May 2004; currently serving for Trans. on Industrial Informatics.** Past: AE for Industrial Electronics Magazine, Trans. on Ind. Electronics. All have high citation index.
- * **Senior Member** of the Institute of Electrical and Electronics Engineers (**SMIEEE**), since 2004.
- * **Fellow** of The Institution of Engineering and Technology (**FIET, Feb. 2011**). **Member IET** since **1999**.
- * **Member** of UK Engineering Council - **Chartered Engineer (CEng, since 1999)**,
- * **Member** of European Federation of National Engineering Associations, **European Engineer (Eur Ing)** since 2002.
- * **Guest Editor of IEEE Transactions on Industrial Electronics/Informatics**, for five special sections: *FPGAs in Industrial Control Systems* (2007, 2008, 2012), one special issue on International Symposium on Industrial Electronics 2008 (October 2009) and Computational Intelligence for Drives (2013).

* **Invited to participate as referee in Assessment Panel** in the Aalto University Research Art and Impact Assessment, **RAI 2018**, Finland, 26-31 August 2018.

* **Referee in Group of Expert eValuators (GEV)** - Italian National Agency for the Evaluation of Universities and Research Institutes (ANVUR) - eValuation of Quality of Research 2004-10 (Sept. 2012).

* **Invited/Appointed Research Proposals Evaluator** for: EPSRC UK (Sept.'11), EU Cyprus (Nov. 2011).

* **Letter** from IEEE Industrial Electronics Society (IES) President, Prof. Xinghuo Yu (Professor, RMIT, Australia) for **contribution as Associate Editor to the IEEE Transactions on Industrial Electronics journal**. February 2018.

* **Letter** from IEEE Division VI Director and Industrial Electronics Society (IES) former President, Prof. John Hung (Professor, Auburn University, USA) for **contributions to IEEE activities for more than a decade and specifically for the successful organisation of IEEE International Symposium on Industrial Electronics (ISIE)**, Edinburgh, in June 2017. December 2017.

* **General Chairman** of the *IEEE International Symposium on Industrial Electronics (ISIE)*, Edinburgh, June 2017. Papers submitted: 463, registered: 338, from 66 countries. Number of registered participants: 357. Papers are included in the IEEE Xplorer Digital Library and most other international digital libraries.

* **General Chairman** of the *IEEE Optimisation of Electrical and Electronic Equipment (OPTIM)*, Brasov, Romania, May 2012, May 2014, May 2017. Around 200 refereed papers (IEEE Xplorer) at each edition.

* **General Chairman** of the *IEEE Joint conference ACEMP-OPTIM-Electromotion, Side, Turkey, 2-4 September 2015*.

* **General Chairman** of the *IEEE International Conference on Industrial Informatics (INDIN)*, Cambridge, July 2015. Papers submitted: 370, accepted: 252. Number of registered participants: 250. All papers will be included in the IEEE Xplorer Digital Library and most other international digital libraries.

* **General Chairman** of the *IEEE International Symposium on Industrial Electronics (ISIE)*, Cambridge, July 2008. Papers submitted: 816, accepted: 442. Participants: 450. Papers in IEEE Xplorer Digital Library.

* **Founder and Past Chairman** (2008, 2009) of the *IEEE Industrial Electronics Chapter of UK and Republic of Ireland*. Strategic leadership of over 200 professionals, organisation of technical events, etc.

* **Founder & Chairman (Jan.'05–Nov'07)** of the *Electronic Systems on Chip* Technical Committee of **IEEE Industrial Electronics Society**. Still active member since then. <http://ieee-ies.org/tc/esoc/>

* **Academic Expert** evaluator for **European Commission's TEMPUS programme**, 2007, Turin, Italy.

* **EC Leonardo programme External assessor**, appointed by Leonardo National Agency, UK (2004).

* **Member of International Advisory Board** - Accellera Designers Forum (1999-2004) - <http://www.eda.org/pub/adf/ADFboardm.html#peb>

* **Chairman of the IET East Midlands Branch Committee and Member of IET Council** (2003-2004)

* **IET Student Advisor** (2000 – to date).

* **Member** of the international organising committee, programme committees or track chairs of several conferences: ISIE, IECON, ICIT, OPTIM, POWERENG, SIES, etc. since 2006; currently 3 per year.

* **Chairman** of many sessions of IEEE International Symposia/Conferences: ISIE, IECON, ICIT, OPTIM.

* **Professional reviewer** for papers and books for several IEEE journals and conferences, IET Power Electronics, International Journal of Engineering Education, Elsevier Science.

Invited presentations, short courses and tutorials:

* **Invited keynote presentation:** “*Modelling and Design of Digital Electronic Systems*”, *IEEE International conference on Development and Application Systems*, University of Suceava, Romania, 19-21 May 2016.

* **Invited presentations:** “*Modern Methodologies for Digital Systems Modelling and Design*”, invited by the Hunan province, China, presented at Hubei University of Technology, Wuhan, China, 7-10 April 2015.

* **Invited presentation:** “*Embracing change towards success in synergy with the community*”, presented at the international forum for training talented engineers, Beijing, China, 17 May 2013.

* **Tutorial** (3 hours): “*Electronic Design Methodologies targeting FPGAs. Software engineering for hardware design ?*”, Annual International Conference of IEEE Industrial Electronics Society, IECON 2011, Melbourne, Australia, 7 November 2011.

* **Invited presentation** (2 hours): “*Electronic Design Methodologies – FPGA Applications. Software engineering approach to hardware design ?*”, University of Manchester, UK, 17 January 2011.

- * **Invited presentation** (2 hours): *“Modern Electronic System Modelling and Design Methods”* presented at ESIAME. Paris, France, 22 November 2010.
- * **Invited presentation:** *“Electronics – Modern Design or Art ?”* presented at IEEE UK&RI Chapter meeting, 18 October 2010, Cambridge.
- * **Invited presentation:** *Renewable Control Technologies*, presented at Cleanpower International Conference, 19th June 2009, Cambridge, UK.
- * **Invited presentation:** *Sustainable Development. Integrated Renewable Energy Systems – Holistic Modelling & Control*, presented at “e – Technologies in Renewable Energy Systems: Teaching and Learning” European Socrates Intensive Project summer school, Patras, Greece, 8 July 2008.
- * **Tutorial** (4 hours): *FPGAs used in Industrial Control Systems*, presented at IEEE International Industrial Electronics Conference (IECON’06), Paris, 6 November 2006.
- * **Tutorial** (3 hours): *HDL Modelling Environment for Power Electronic Systems Integrated Development and Controller Rapid Prototyping*, presented at IEEE International Symposium on Industrial Electronics, Dubrovnik, Croatia, June 2005.
- * **Tutorial** (3 hours): *Power Electronic Systems Modelling & Controller Rapid Prototyping - An Efficient Novel Method using VHDL*, presented at IEEE Int. Workshop on COMputers in Power ELEctronics (COMPEL), Univ. of Urbana, Illinois, USA, August 2004.
- * **Invited short course** (1 day) on: *Introduction to VHDL Design of Digital Electronic Circuits with Applications to Power Systems Modelling and FPGA based Controller Design*, presented at the Centre of Excellence in Power Electronics and Intelligent Control for Energy Conservation, Warsaw University of Technology, Poland, May 2004.
- * **Tutorial** (2 hours): *Modern Electronic Design Automation Techniques (based on Hardware Description Languages) Applied to Power Electronic Systems Holistic Modelling*, presented at IEEE Int. Symposium on Industrial Electronics, Rio de Janeiro, June 2003.
- * **Invited presentation:** *Collaboration Mechanisms Between Universities and Industry in UK*, International TEMPUS Symposium on "Retraining Support for Small and Medium Enterprises", Brasov, Romania, May 2000.

Awards and Prizes:

- * **Doctor Honoris Causa award** – honorary doctorate awarded by Transilvania University of Brasov, Romania. **Date: 15 January 2016.**
 - * **Certificates** from Editor-in-chiefs of IEEE Trans. on Industrial Electronics and IEEE Trans. on Industrial Informatics **for contributions as Associate Editor to high citation index.** November 2012, Nov. 2015.
 - * **Certificate** from Editor-in-chief of IEEE Transactions on Industrial Electronics **for the “outstanding contribution as Associate Editor to the journal’s highest citation index in IEEE”.** November 2009.
 - * **Certificate** from the President of the IEEE Industrial Electronics Society (IES) in **appreciation for the “outstanding contributions”** to IEEE Industrial Electronics Society technical and organisational activities. November 2005.
 - * **Anglia Ruskin University VC’s award:** *Our University in the International Arena.* June’08.
 - * **Prestigious Journal paper published:** [9,154 full-text views \(IEEE Xplore, 29 July 2018\)](#) and [has reached 853 citations \(Google Scholar, 29 July 2018\):](#)
- Monmasson, E., Cirstea, M.N.: **“FPGA Design Methodology for Industrial Control Systems – a Review”**, IEEE Transactions on Industrial Electronics, Special Issue on *FPGAs used in Industrial control Systems*, vol. 54, no. 4, August 2007, pp. 1824-1842, ISSN 0278-0046. DOI: 10.1109/TIE.2007.898281.
- * **Certificate** from the President of the IEEE Industrial Electronics Society (IES) in **appreciation for the “outstanding contributions”** to IEEE Industrial Electronics Society technical and organisational activities. November 2005.
 - * **IET Student Counsellor of the Year Award, 2003.** An annual UK award for best student counsellor.
 - * **Best Presentation Award** (in its section) for presenting the paper (on collaborative work with NEC Electronics Europe GMBH): Cirstea, M.N., Dinu, A., Redpath, S.: "Modelling a New Sensorless Control Strategy for Brushless DC Motors", Proc. of IEEE Int. Conference on Industrial Technology ICIT’04, Hammamet, Tunisia, December 2004, CDROM.

- * **Best Student Paper Prize:** Coggins, T. J., Cirstea, M.N.: "A Novel HDL Based In-house Design Approach to *fastflex* Data Controllers", IEEE. Symposium on Industrial Electronics (ISIE'2004), Ajaccio, France, May 2004, pp. 1531-1536.
- * **Award: 3rd Asea Brown Boveri (ABB) Prize** for the paper: Dinu, A., Cirstea, M.N., McCormick, M., Haydock, L. and Al-Khayat, N.: "Neural Current Controller for Induction Motor Applications" Proc. IEEE Int. Conf. on Optimization of Electronic Equipment (OPTIM), Romania, 2000, pp.665-670.

Leadership, managerial experience and achievements:

- * **Significant role in implementing the 15/30 credits curriculum structure** at Anglia Ruskin University and a major continuous streamlining of the curriculum afterwards. The number of courses was reduced from 70 in 2008 to 13 in 2018, and the number of modules was reduced from 300 to 130, while the student number has increased.
- * **Significant role in professional accreditation from IET, BCS and JAMES** - gained/renewed/enhanced. In particular, in May 2015, the BEng (Hons) Computer Science course gained BCS accreditation at CITP (highest level) and IET accreditation at partial CEng (highest level), while BEng (Hons) Electronic Engineering was (re)accredited at partial CEng (highest possible level, increased from IEng). The MSc Electronic and Electrical Engineering was also accredited for the first time by the IET at CEng further learning level (highest possible). Joint Audio Media Education Support (JAMES) accredited our BSc (Hons) Audio and Music Technology course in 2011, 2014, and 2017.
- * **Several participations in validation panels in UK and abroad:** i) MAHSA Univ., Kuala Lumpur, Malaysia (March 2011, set of MBAs in Health), ii) Anglia Ruskin University Chelmsford (Chair, April 2013, MSc Health Management, Distance Learning), iii) London South Bank Univ. (February 2014, set of MSc in Engineering), iv) Amity Univ., Singapore (Chair, March 2014, Master in International Law), v) Amity Univ., Singapore (March 2014, institutional review), vi) HELP Univ. Kuala Lumpur, Malaysia (March 2014, institutional approval), vii) London South Bank Univ. (March 2015, set of MSc in Engineering validated for Bahrain); viii) Anglia Ruskin Univ. (April 2016, set of BAs in English languages); ix) University of Bedfordshire (20 April 2018, Periodic Review panel for School of Computing).
- * **General Engineering UOA 15 convenor** for the periodic research review in UK – Research Excellence Framework (REF) 2014. Very good results obtained; in particular **Impact** was rated 70% @3*; 30% @ 2*.
- * **Senate member** (2011–18) and member of the **Collaborative Activities Committee** (2014-18) at Anglia Ruskin University.
- * **Several participations to UK and international academic promotion panels:** Prof. Elena Gaura (Coventry University, UK, 2009), Dr. James Brusey (Coventry University, UK, 2011), Dr. Dana Perniu (Transilvania University of Brasov, Romania, 2013), Dr. Daniel Cotfas (Transilvania University of Brasov, Romania, 2014), Dr. Ray Cheung (City University of Hong Kong, 2015), Dr Mihai Ciobotariu, (University of New South Wales, Australia, 2015).
- * **Participations in high level interview panels in UK and abroad:** i) Anglia Ruskin University: Professor and HoD, Engineering department (2014); Professor and Director of IT research institute (2015); ii) Transilvania University of Brasov, Romania - Professor and University Director of Research (2016); iii) Univ. of Bedfordshire – Professor of Engineering (2017);
- * **Vice-President for Membership Activities** – IEEE Industrial Electronics Society, Jan.2013 – Dec.2016. Leading the professional activities of approx..6,000 members / 56 Chapters around the globe, attracting new members to the IEEE, reporting 3 times per year in front of Administrative Committee and handling a budget of USD 70K. The Industrial Electronics Society is very well regarded in IEEE and healthy financially (USD 10 million worth), organising and co-sponsoring more than 20 international conferences/workshops every year and publishing 3 prestigious journals. Promotional articles authored.
- * **Founder and Past Chairman** (2008-9) of the *IEEE Industrial Electronics Chapter of UK and Republic of Ireland*. Strategic leadership of over 200 professionals, organisation of technical events, budget, etc.
- * **Founder and Past Chairman** (3 years, 2005-2007) of the *Electronic Systems on a Chip* Technical Committee of the IEEE Industrial Electronics Society (since Jan.'05) <http://ieee-ies.org/tc/esoc/>. Activities include: budgetary responsibilities; organisation of special sessions or acting as main track chair at IEEE conferences: IECON'05, ISIE'06, IECON'06, IECON'08, ISIE'10; IECON'10, ISIE'11, IECON'11, IECON'12, ICIT'13, ISIE'13, IECON'13, ICIT'17. Refereeing of IEEE Transactions and Conference papers; publishing materials to advertise the committee and its technical activities.

* **Framework 6 European Commission Programme: Control of Renewable Integrated Systems Targeting Advanced Landmarks (CRISTAL)** – Coordination Action, **Euro 130K**. Prof. M. Cirstea was **author of project proposal** and **Consortium Coordinator** including 11 institutions from 7 European countries. Duration: 2 years, ending 2010.

* Since January 2008 – present, Prof. Cirstea is **Head of Computing and Technology Department**, including now 32 FT and 10 PT academics and supported by 10 technicians and administrators. The Department is split between Anglia Ruskin's Cambridge and Chelmsford Campuses, hosts 17 research students and about 700 taught students, [REDACTED] Achievements:

- successful integration of the former two departments of Design & Technology and Computing, with new roles and strategic new DAP structure. Departmental financial balance was always positive since 2008.
- leading and participating to the validation of many new courses (8 MScs, 1 MBA, revalidating all Chelmsford courses, a new Apprenticeship Degree: BSc (Hons) Digital and Technology solutions).
- being involved in the Internationalisation of the department as part of the university's strategy, with past franchises of courses to Malaysia (Limkokwing Univ., MAHSA), India (Amity Univ.), Greece (Omiros College), current franchises in Malaysia (HELP CAT), Trinidad and Tobago (SAM) and new partnerships in Electronics with Shaoyang University and Hubei University of Technology, China.
- the number of PhD students in the dept. has increased, especially in Cambridge (from 4 to 17).
- appointing /leading probation of new academics (20 Cambridge, 5 Chelmsford).
- the number of scholarly and research activities have increased in the department with many Knowledge transfer partnerships KTP/KEEP being handled by the department (14 in 2014-15, almost half of all active KTPs/KEEPS at Anglia). [REDACTED]

* Between June 2005 – Dec. 2007, Prof. Cirstea was **Head of the Design and Technology Department**, including approx. 42 staff (27 academics, 7 technicians, 8 administrators), 30+ research students and approx. 500 undergraduates, had an annual budget of [REDACTED] and was split between Anglia Ruskin's Cambridge and Chelmsford Campuses. The Design & Technology department:

- **met and exceeded its target** in terms of external income generation in 2005-2006
- the department achieved **an overall increased intake** of students & **PhD students** in Sept. 2006
- the **number of research active staff and 3-rd leg activities have increased**, especially in Cambridge. In Sept. 2004 there was no external income, then to Dec.07: 4 KTPs, 2 KEEPs, 1 EC project, 1 consultancy, 1 industry training course, 1 EEDA proof of concept, 1 patent application.
- **leading the successful departmental migration to a new modular structure** of the provision, through design and implementation of the 15/30 credits new curriculum. At the same time, **IET (formerly IEE) accreditation** at Incorporated Engineer level was obtained, continuing for the Engineering courses in Chelmsford and **newly awarded to the BEng Electronics and the BSc Audio and Music Technology courses of the Cambridge campus**.
- **appointing /leading probation** of new academics (5 Cambridge, 2 Chelmsford).
- **leading the successful completion** (July 2007) of the degrees of students in **Mathematics and Statistics**, after university's decision to phase out Maths, including their **Royal Statistical Society** professional certificates, under difficult circumstances (5 specialist academics leaving the dept.).
- **leading and participating** to the production of advertising materials for teaching and research.

* Between Sept. 2004 – April 2005, as **Head of Department of Mathematics and Technology** at Anglia Ruskin, M. Cirstea was in charge of managing the resources allocated to the department, both human and material. Responsibility for 14 academics, 6 support staff and 10 research students. So far, he had important contributions to Anglia Ruskin's changes and restructuring, in:

- **setting up an Employers Advisory Group** associated with the department, which consists of senior industrialists having meetings with academics twice a year and advising on courses.
- **leading and stimulating the increase of research activities** and setting up of the Electronic Systems Modelling and Design research group in the Cambridge campus.
- **establishing relevant links with local industry**, leading to a contract with John Henry Ltd., KTP with Transmitton Ltd., short course in VHDL training to Audio Processing Technology Ltd, KEEP with Cambridge Recycling Services Ltd..

* 1999-2004: **one of the 9 members (sole Europe representative) of the International Advisory Board** of Accellera Designers Forum – organisation driving forward standards for electronic systems modelling & design, under IEEE co-ordination <http://www.eda.org/pub/adf/ADFboardm.html#peb>

* **Chairman of the East Midlands Branch Committee of the Institution of Electrical Engineers** (Jan.'03–Sept.'04). Coordinated the IEE activities of the 22 Committee members. In 2003 a business plan and a budget were submitted, approved by the IEE (now IET) HQ without modifications.

Other academic achievements:

* developing a **new approach to teaching Microelectronics** – papers published in international peer reviewed educational journal, International Journal of Engineering Education: i) Cirstea, M.N.: "Problem Based Learning in Microelectronics", Vol. 19, No.5, 2003, pp.738-741, ISSN:0949-149X; ii) Nicula, D., Cirstea, M.N.: "Successful CAD Tools Application to FPGA/ASIC Design", Vol.15, No.1, 1999, pp.72-76.

* **establishment of effective international links which promote the university**, through European programmes, IEEE activities and professional links with institutions like: Auburn University - USA, Warsaw University of Technology - Poland, Transilvania University of Brasov - Romania, Politecnico di Torino – Italy, Aalborg University – Denmark, Technical University of Cluj-Napoca – Romania.

* **contribution** to the facilitation / creation of an effective learning environment for a diverse student population, including the **setup of several research and scholarly Electronics and CAD laboratories**, at Anglia Ruskin University and De Montfort University.

* **contribution** to developing an **international focus** in teaching and education, by promoting staff/student exchanges through **European Academic Programmes**: TEMPUS-AC-JEP- 2816-90, TEMPUS-AC-JEP-13559-98, SOCRATES/ERASMUS: 1999-2014.

Income generation / Research collaboration / Industrial links / Training courses delivered:

- ♦ **Since 2014, leading two key partnerships with universities in China**, with special agreements approved by the Chinese Ministry of Education: Shaoyang University, Shaoyang, and Hubei University of Technology, Wuhan. These two partnership are bringing [REDACTED] for our team's support of electronics teaching delivery in China and during the academic year 2017-18 have brought **10 students as direct entrants into the final year of our BEng (Hons) Electronics**.
- ♦ **International Conference organisation – bid written / won, general chairman. IEEE International Symposium on Industrial Electronics (ISIE 2017)**, 19-22 June 2017, Edinburgh, UK. [REDACTED]
- ♦ **International Conference organisation – bid writing, general chairman. IEEE International Conference on Industrial Informatics (INDIN 2015)**, 22-24 July 2015, Cambridge, UK. [REDACTED]
- ♦ **Low Carbon Knowledge Transfer programme with LMK Thermosafe Ltd** – contribution as support academic, Intelligent Temperature sensors, 2014 -2015, [REDACTED]
- ♦ **2 Low Carbon Knowledge Transfer programmes with Calnex Electronics Ltd.:** – contribution as support academic, High Temperature sensors (2011-2012 and 2014-15), [REDACTED]. The newly developed infrared temperature sensor, capable of accurately measuring small infrared signals remotely at an ambient temperature over 180°C without additional cooling, is a good example of success in collaboration with industry. According to the company's MD, "PyroMini has already been a resounding success... we were able to design a product which has many unique features, making it the most advanced of its kind in the world. This has put us ahead of our competitors in Germany, Japan and the USA Its performance is so much better than earlier designs that sales of this type of sensor have increased by 300% and we are currently negotiating a contract in the USA for the supply of 10,000 pieces."
- ♦ **Knowledge Transfer Partnership (KTP) with STV International** – contribution as support academic, 2010 -2012. [REDACTED]
- ♦ **Delivering Training Courses to Industry: Introduction to VHDL Design** – to Datalink Ltd.(2003), Transmittion Ltd. (2003), Audio Processing Technology Ltd. (2005), range of companies in Cambridge (course delivered at Anglia Ruskin University, 2010): Cambridge Silicon Radio (CSR) Ltd, Plastic Logic Ltd, Bertrandt Ltd, Displaylink Ltd, Exquisite IT Ltd, ADI Ltd.
- ♦ **Framework 6 European Commission Programme: Control of Renewable Integrated Systems Targeting Advanced Landmarks (CRISTAL) – Coordination Action**, including 11 institutions from 7 EU countries, [REDACTED]. **Proposal author and Consortium Coordinator**. Dec.'07 – Dec.'09.
- ♦ **International Conference organisation – bid written / won, general chairman. IEEE International Symposium on Industrial Electronics (ISIE 2008)**, 30 June – 2 July 2015, Cambridge, UK. [REDACTED]
- ♦ **KEEP programme with Cambridge Recycling Services**, ending March 2008, [REDACTED] Modelling and Design of a Labview based electronic control system for the company's modern recycling plant.

- ◆ **Knowledge Transfer Partnership (KTP) with Transmitton Ltd., Ashby-de-la Zouch: *Redesign fastflex range of products using hardware description languages (HDLs) and FPGA implementation.*** [redacted] Oct.'03-Oct.'05. **Grade 2.**
- ◆ **Consultancy for NEC Electronics Europe GmbH - DC Brushless/PM Synchronous motor drives C modelling.** [redacted] March'04.
- ◆ **EPSRC Grant, sole investigator: [redacted] *Predictive Controllers Using State Space Observers & Neural ASICs for PWM Converters & Generators*, 1998-2001, with Newage AVK SEG [redacted].** EPSRC evaluation: **Tending to outstanding.**
- ◆ **European Programmes:** TEMPUS-AC-JEP- 2816-90, TEMPUS-AC-JEP-13559-98, Erasmus: 1999-2013.
- ◆ **Long term (7 years) research collaboration with Newage AVK SEG (currently Cummins Generator Technologies), UK, [redacted] (1997 -2004).**

Research statement – current and future plans:

In the future, I intend to pursue mainly topics related to Artificial Intelligence applied to the Internet of Things, making use of Hardware Description Languages and FPGAs, mainly as research applied to modern intelligent systems. Interest exists for the modelling of systems of systems and also for software engineering approach to hardware systems design – modern computer aided design methodologies.

Training undertaken / certificates awarded - too many to list but including:

- ◆ **Anglia Ruskin University: *Equality and Diversity in Recruitment and Selection Panels*: Nov.'04, Nov'08, March'14; *Appraisers*: Nov.'04. May'08, April'11, March'12, *Managing the Disciplinary Process*: Jan.'06; *Time management*: Jan.'06. *WebCT*: April'06, *Sharepoint VLE*: June'12. *External Income Generation*: May'06, *Having difficult conversations*: April'08, April'11, *Excellence - Serving You Right*: Jan.'09, *Leadership & Management*: June'09, July'09, Sept.'09, Nov.'09, Jan.'10. Prevent, on-line, 2016, Equality and Diversity, on-line, 2016, '18. Fire Marshall, May'17. Global Data Protection Regulations, Feb.'18, Employment Policy update (June'18), Managing Change (June '18).**
- ◆ **Institution of Occupational Safety and Health / West Anglia Training Association: *Safety for Senior Executives*: June 2011.**
- ◆ **Spearhead training: *Developing Marketing Strategies*: Sept'03.**
- ◆ **De Montfort University: *Research Supervision*: March'99, *Classroom Observation*: July'01, *C++*: May'02, *Supporting Student Learning*: June'02, *Appraisers*: Sept'02, Hemsley Fraser - *Introduction to Effective Project Management*: Oct'03.**
- ◆ **Princeton University US (Prof.S.Y.Kung, Prof.W.Wolf): *Embedded Systems*, July'00, Lincoln, UK.**
- ◆ **EPSRC: *Making the most of your Intellectual Property*, Jan.'99, Strathclyde Univ., Glasgow, UK.**
- ◆ **Europractice: *FPGA design using XILINX*, Jan.'98, Leuven, Belgium.**
- ◆ **Nottingham Trent University – *Certificate in Research Supervision - 1996.***

Education:

Postgraduate PT: 1998-1999: De Montfort Univ.: Planning to Teach, Learners & Learning, Assessing & Evaluating, Lecturing in Practice.

1999: Post Graduate Certificate in Teaching and Learning (PGCTL).

Postgraduate FT: 11.1993-10.1996 Nottingham Trent University, UK. **PhD: *An investigation into ASIC control of a 6-pulse cycloconverter for quad-winding induction motor.*** Mentor Graphics EDA used for conception, design, simulation & implementation of an ASIC controlled divided winding induction motor cycloconverter drive. **Advantages:** improved harmonics, high reliability, reduction in power consumption, torque pulsation, motor vibration, size, cost. **Applications:** warships, icebreakers, rolling mills, railway engines. Built & tested. **PT lecturer:** EDA / Analogue Electronics.

1996: Doctor of Philosophy (PhD) in Electronic/Electrical Engineering.

University: 10.1985-06.1990 Transilvania University Brasov, Romania, 5 years full time. Significant subjects: Advanced Mathematics, Programming, Electronics, Control, Electrical Drives, Engineering.

1990: MEng Electrical Engineering Honours - (Diploma Engineer 99.8%) 1st in a group of 70.

National Military Service: 1984-1985 - Full Time, School of Telecommunications, Sibiu, Romania.

1985: Reservist Lieutenant (Telecomms), qualified: *mobile radio units, Morse code, tel. switchboard*

Secondary: 1980-1984 "Andrei Saguna" Mathematics & Physics National College, Brasov, Romania.

1st in a series of approx. 150.

1984: Diploma of Baccalaureate 98.7% ("A" levels): Maths, Physics, Engineering.

Prior employment:

01.1998-08.2004 Senior Lecturer - De Montfort University, Leicester, UK. *Teaching:* Power Electronics, Advanced Digital Design (including VHDL, FPGAs), Embedded Control, Vehicle Electronics, Electronics for Mechatronics (MSc). Supervising final year ug and MSc projects in Electronics and Mechatronics. *Research:* Systems' modelling & power electronics control.

01.1997-12.1997 Lecturer: De Montfort University, Leicester, UK. *Topics:* Electronics, Microelectronics.

02.1992-10.1993 Lecturer (Control, Power Electronics): Transilvania University Brasov, Romania.

Additionally, many projects carried out as database programmer / consultant (for over 10 companies).

08.1990-02.1992 Systems Analyst: Greenhouse company, Codlea, Romania. FoxPro programming, MS-DOS operating system officer and computer system manager.

Personal data:

Referees:

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S. Sadeghi-Esfahlani, S. Cirstea, A. Sanaei, M. Cirstea: "Mixed Reality and Fire Detection Algorithm", Proc. of IEEE Int. Conference on Industrial Electronics (IECON 2018), Washington DC, USA, October 2018.

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Professor Marcian Cirstea - FULL LIST OF PUBLICATIONS

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