

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

Address: Anglia Ruskin University, School of Computing and Information Science, Science & Engineering Faculty, East Road, Cambridge, CB1 1PT, UK. Email: marcian.cirstea@aru.ac.uk; marcian@ieee.org, Tel. +44-1223-698184.

Professional profile: university professor, with 20 years of management experience and 32 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: 22; i10-index: 44; Citations: 3,943 – July 2025.**

Scopus Author ID: [7005778162](#) **ORCID:** [0000-0003-3373-9816](#)

Present Employment: **Professor and Head of School of Computing and Information Science, Anglia Ruskin University, Cambridge, UK** [Head of School – Marcian Cirstea - YouTube](#) (employed as Principal Lecturer in September 2004, full Professor since April 2007).

Teaching: Digital systems, Hardware Description Languages, FPGAs, power converters, final year project

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:

9 PhDs: 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 (2014, Junior Barrett), Innovative concept of strong type-checking computer system for enhanced software reliability (2015, Jonathan Kimmitt), Conceptual Development of a Novel Digital Controller for Optimised Operation of a Hybrid Renewable Energy System (2018, John Darvill).

4 MPhils: 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.

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

Research external examiner:

- **11 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, ix) 02.11.2018, Cluj-Napoca, Romania, x) 23.09.2019, Technical University of Iasi, Romania, xi) 04.12.2020, Cluj-Napoca, Romania,
- **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

* **Fellow** of the Institute of Electrical and Electronics Engineers **FIEEE (2024) (Senior Member IEEE since 2004; Member IEEE since 1997)**. FIEEE citation: **‘for contributions to system-on-chip design methods and industrial digital controllers using HDLs and FPGAs’**

* **Fellow** of The Institution of Engineering and Technology **FIET (2011)**. **Member IET since 1999.**

* **Member** of UK Engineering Council - **Chartered Engineer (CEng, via IET, since 1999)**,

* **Member** of European Federation of National Engineering Associations, **European Engineer (Eur Ing)** since 2002.

* **Vice-President Planning and Development** – IEEE Industrial Electronics Society, 2024-25.

- * **Vice-President for Membership Activities** – IEEE Industrial Electronics Society, 2013-14, 2015-16.
- * **Member of Admin. Committee (AdCom) of IEEE Industrial Electronics Society**, 2005-16.2019-22.
- * **Member of Finance Committee of IEEE Industrial Electronics Society**, 2021-24.
- * **Member of Membership Activities Committee of IEEE Industrial Electronics Society**, 2017-21.
- * **Member of Awards and Honours Committee of IEEE Industrial Electronics Society**, 2019.
- * **Associated Editor of IEEE since May 2004; currently serving for Trans. on Industrial Informatics (IF 11.7 in 2023).** Past: AE for Industrial Electronics Magazine, Trans. on Ind. Electronics. All with high IF.
- * **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).
- * **Referee invited** by Sectional Committee V (Engineering and Technology) of the **Indian National Science Academy (INSA)** to provide a critical assessment / review for **Prof. Chandan Chakraborty's** nomination as **Fellow of INSA** (March 2025).
- * **Referee (by invitation) 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).
- * **General co-Chairman of IEEE Joint conference ACEMP-OPTIM, May'17, Sept.'19, Sept.'21, Sept'23.**
- * **Vice-Chairman of the IEEE Joint conference ACEMP-OPTIM, Istanbul, Turkey, 27-29 August 2019.**
- * **Letter** from IEEE Industrial Electronics Society (IES) President, Prof. Xinghuo Yu (Professor, RMIT, Australia) for **contribution as IEEE Transactions on Industrial Electronics Associate Editor** (Feb.'18).
- * **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.** Around 200 refereed papers (IEEE Xplorer) at each edition.
- * **General Chairman of the IEEE Joint conf. ACEMP-OPTIM-Electromotion, Side, Turkey, 2-4 Sept.'15.**
- * **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 – 2015).
- * **Member** of the international organising committee, programme committees or track chairs of several conferences: ISIE, IECON, ICIT, OPTIM, POWERENG, SIES, etc. since 2006; average 2-3 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 tutorial** (3 hours): *"Digital Electronic System-on-Chip (SoC) Design Methodologies – Evolution and Trends"*, IEEE International Joint Conf. ACEMP-OPTIM 2025, Timisoara, Romania, 14 May 2025.
- * **Tutorial** (3 hours) presented and video recorded, M. Cirstea together with Prof. Eric Monmasson (CY Cergy Paris University): *"Modelling and Design of Digital Electronic Systems (targeting FPGAs) – Methods, Trends and Application to the Control of Electrical Systems"*, Annual International Conference of IEEE Industrial Electronics Society, IECON 2019, Lisbon, Portugal, 14 October 2019. Open access for IEEE members (240,000 members worldwide) at:
<https://resourcecenter.ies.ieee.org/conferences/iecon-2019/IESIECON2019VID0080.html>
- * **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 ELelectronics (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 IES technical and organisational activities. November 2005.
- * **Anglia Ruskin University Vice-Chancellor award: *Our University in the International Arena***. June’08.
- * **Prestigious review journal papers published:**
Cirstea, M., Benkrid, K., Dinu, A., Ghiriti, R., Petreus, D. **“Digital Electronic System-on-Chip Design: Methodologies, Tools, Evolution, and Trends.”** MDPI Micromachines 2024, 15, 247. <https://doi.org/10.3390/mi15020247> . (IF 3.4; 6,000+ views, 65 citations July 2025 Google Scholar).
- 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. **17,704 full text views since 2011 (IEEE Xplore, July’25); 1,258 citations (Google Scholar, July’25).**
- * **Certificate** from the President of the IEEE Industrial Electronics Society (IES) in **appreciation for the “outstanding contributions”** to IEEE IES 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:

- * Since October 2018, Prof. Cirstea is **Head of School of Computing and Information Science**, with a budget of approx. £9 million. The school employs 44 academics, is concentrating its provision towards the Cambridge campus, hosts 3 research groups and 15 research students and in addition to more traditional computer science courses, it focuses its provision on cyber security, artificial intelligence, machine learning and data science.
- * **Significant role in implementing the 2018/19 restructuring** at Anglia Ruskin University, including major reshape of the vision and strategy for the subject area of computing, aligning it with major challenges identified by the UK government and focusing the provision towards cybersecurity, artificial intelligence, machine learning and data science, while retaining a more traditional computer science, computer networks and software development subject base. Concentration of subject area in Cambridge, aligning interests with local and national industry, reviving employer engagement and enhancing student employability through project based content and real-life scenario-based learning. Extended distance learning provision of the school by validating data science courses to be delivered through an innovative partnership with industry. External engagement and income generation has increased, mainly through Artificial Intelligence-based research projects and knowledge transfer partnerships. Embarked the school in novel degree apprenticeship schemes and achieved significant apprenticeship engagements growth.
- * **Senate member** (2011–18, 2021-23, 2024-26) and member of the **Collaborative Activities Committee** (2014-18) at Anglia Ruskin University.
- * **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. In Nov.’20, full accreditation was additionally gained for BSc Artificial Intelligence, BSc Software Engineering, BSc Computer Science.

- * **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; number of modules reduced from 300 to 130, student number increased.
- * **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); x) Anglia Ruskin Univ. – chaired 3 validation panels for Business and Law between 2019-2022.
- * **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); iv) Professor of Digital Innovation, ARU (2023).
- * **Vice-President for Planning and Development** – IEEE Industrial Electronics Society, Jan.2024 – Dec.2025. Leading the strategic developments and outline planning of professional activities for the society with approx. 11,500 members around the globe and reporting 3 times per year to the Administrative Committee. The Industrial Electronics Society is very well regarded in IEEE and healthy financially (USD £30 million worth), organising and co-sponsoring more than 30 international conferences/workshops every year and publishing several prestigious journals.
- * **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 25 million worth), organising and co-sponsoring more than 20 international conferences/workshops every year and publishing 3 prestigious journals. Promotional articles authored.
- * **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*.
- * **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.
- * Between January 2008 – September 2018, Prof. Cirstea was **Head of Computing and Technology Department**, including 32 FT and 10 PT academics and supported by 10 technicians and administrators. The Department was split between ARU's Cambridge and Chelmsford Campuses, housed 17 research students and about 700 taught students, and had an annual budget of approx. £8 million. 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 positive since 2008 (2018 estimate= +£400K).
 - 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 (HELP CAT, MAHSA, Limkokwing Univ.), Trinidad and Tobago (SAM), India (Amity Univ.), Greece (Omiros College) and 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). External income of about £400K per annum.

* **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 (continuously active since Jan.'05) <http://iee-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.

* 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 approx. £3 million 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 Transmittion 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/ERASMUS+: 1999-2019.

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

- ♦ **Between 2019 – 2024 leading key partnerships with Arm Ltd**, looking in methods for system on chip design, working collaboratively in the development and validation of distance learning courses in embedded computing and artificial intelligence, attracting co-sponsorship of a PhD student (£30K), attracting real-life projects and live brief case studies for our students and courses.
- ♦ **Between 2014-2019 - leading key partnerships with Chinese universities**, with special agreements approved by the Chinese Ministry of Education: Shaoyang University (Shaoyang) and Hubei University of Technology (Wuhan). These two partnerships brought **£240K of external income** per year 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. approx. **£230K**.
- ♦ **International Conference organisation – bid writing, general chairman. IEEE International Conference on Industrial Informatics (INDIN 2015)**, 22-24 July 2015, Cambridge, UK. **£140K**.
- ♦ **Low Carbon Knowledge Transfer programme with LMK Thermosafe Ltd** – contribution as support academic, Intelligent Temperature sensors, 2014 -2015, **£64K**.
- ♦ **2 Low Carbon Knowledge Transfer programmes with Calnex Electronics Ltd.** – contribution as support academic, High Temperature sensors (2011-2012 and 2014-15), **£36K+£63K**. 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. Value: **£ 120 K**.
- ♦ **Delivering Training Courses to Industry: Introduction to VHDL Design** – to Datalink Ltd. (2003), Transmitton 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, **Euro 130 K**. **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. **£17K**.
- ♦ **KEEP programme with Cambridge Recycling Services**, ending March 2008, **£26K**. Modelling and Design of a Labview based electronic control system for the company's modern recycling plant.
- ♦ **Knowledge Transfer Partnership (KTP) with Transmitton Ltd. (Siemens)**, Ashby-de-la Zouch: **Redesign fastflex range of products using hardware description languages (HDLs) and FPGA implementation**. Value: **£ 105 K**, Oct.'03-Oct.'05. **Grade 2**. Siemens Engineering Manager (2018): *"The technical innovation developed during the KTP project remains a core part of the electronic module hardware and continues to deliver commercial benefit to the business. While ongoing production data remains commercially sensitive, it is correct to say that the number of fastflex modules produced since 2013 which include this technology run well into the thousands, with a value to the business measured in millions of pounds annually."*

The FPGA designs produced by the KTP have therefore shown a solid commercial return over more than 12 years since the original investment."

- ♦ **Consultancy for NEC Electronics Europe GmbH** - DC Brushless/PM Synchronous motor drives C modelling. **£11K**, March'04.
- ♦ **EPSRC Grant, sole investigator: £ 52 K Predictive Controllers Using State Space Observers & Neural ASICs for PWM Converters & Generators**, 1998-2001, with **Newage AVK SEG (+£9.5K)**. 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, approx. income **£ 100 K** (personal contribution). (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:** Many recent training courses, about 3 per year. Some examples are: **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), HoS Training (set of courses: Jan'19, Feb'19, Mar'19), Managing Conflicts: April'19.
- ♦ **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: British & Romanian Citizen, married, one child. *Languages:* English: proficient, French: fluent, Romanian: native. *Driving licence:* B, 39 years. *Hobbies:* Bridge, tennis, table tennis. *Countries visited:* USA, Canada, Singapore, Japan, Thailand, Brasil, Switzerland, France, Spain, Italy, Germany, Belgium, Austria, Monaco, Andorra, Luxembourg, Holland, Poland, Hungary, Bulgaria, Tunisia, Turkey, Greece, Trinidad & Tobago, Malaysia, Australia, China, Taiwan, Hong Kong.

Other professional activities noted (since 2018):

- 2024 - 2025 achievements: successful VP Planning and Development role in IEEE IES - many meetings online attended and some chaired, sets of meetings attended in person in New York (January 2024), Kyoto (March 2024), Chicago (November 2024), Puerto Rico (January 2025), Amsterdam (March 2025), ACEMP-OPTIM conference in Romania (May 2025, including being general co-chair and delivering a 3h invited tutorial). I am due to attend ISIE'25 conference and set of IEEE IES executive meetings in Toronto (June 2025). Finance chair for IECON'25 conference in Madrid (October 2025) and designated Honorary co-chair ONCON'25 online (December 2025) and panel member for best PhD award in connection with ONCON'25.
- IEEE IES Vice President for Planning and Development 2024-2025
- Associate Editor for IEEE Transactions on Industrial Informatics (IF 12.3, listed #5 in Computer Science of 105).
- member of the IEEE Industrial Electronics Society Technical Committee on Electronic System on Chip (2005-2025)
- member of the IEEE Industrial Electronics Society Finance committee (2020-2024)
- member of Admin. Committee (AdCom) of IEEE Industrial Electronics Society (2019-2022)
- member of the IEEE Industrial Electronics Society Membership Activities committee (2018-2022)
- general co-chairman for international conference IEEE ACEMP-OPTIM (September 2023, Istanbul, Turkey)
- special sessions co-chairman for international conference IEEE ISIE (April 2023, Orlando, Florida, USA)
- organised and hosted Women and Girls in Engineering event, guest presenter Dr. Lucia Lo-Bello (univ. of Catania, Italy, secretary IEEE IES and WIE rep), venue ARU Science Centre, Cambridge, 10th February 2023.
- co-chairman of PhD thesis awards committee for international conference IEEE ONCON (online, December 2022)
- general co-chairman for international conference IEEE ACEMP-OPTIM (September 2021, Romania, online)
- embedded systems track co-chair for international conference IEEE IECON 2020 (Oct. 2020, Singapore)
- embedded systems track co-chair for international conference IEEE IECON 2019 (Oct. 2019, Lisbon, Portugal)
- vice-chairman for international conference IEEE ACEMP-OPTIM (August 2019, Istanbul, Turkey)
- tutorials co-chair for international conference IEEE ISIE 2019 (June 2019, Vancouver, Canada)
- interviewed (5 minutes) by BBC Radio Cambridgeshire live on Artificial Intelligence (AI), after the press release related to our (ARU) new AI courses. Friday 12th April 2019.
- tutorials co-chair for international conference IEEE IECON 2018 (October 2018, USA)
- special sessions co-chair for international conference IEEE ISIE 2018 (June 2018, Australia)
- publicity co-chair for international conference IEEE ICIT 2018 (February 2018, France)

Professor Marcian Cirstea - FULL LIST OF PUBLICATIONS

RESEARCH MONOGRAPH (in English)

Cirstea, M.N., Dinu, A., Khor, J., McCormick, M.: **"Neural and Fuzzy Logic Control of Drives and Power Systems"**, Elsevier Science, Oxford, 2002, ISBN 0750655585. **401 citations (July '25, Google Scholar).**

TEXT BOOK (in English):

Cirstea, M.N., Dinu, A., Nicula, D.: **"A Practical Guide to VHDL Design"**, Editura Tehnica, Bucharest, Romania, 2001, ISBN: 9733115398.

TEXT BOOKS (in Romanian):

Cirstea, M.N., Ilea, D.: **User Manual for Foxbase+ programming language** ("Manual de Utilizare a limbajului de programare Foxbase+"), Transilvania University of Brasov, Romania, 1992.

Cirstea, M.N., Ilea, D.: **User Guide for MS-DOS Operating System** ("Ghid de Utilizare a Sistemului de Operare MS-DOS"), 'Duminica' Publisher, Romania, 1991.

PUBLISHED JOURNAL PAPERS (all in English, in reverse chronological order):

35) Hariri, R., Cirstea, M., Maktab Dar Oghaz, M., Benkrid, K., Faust, O. **"Hardware Accelerators for Cardiovascular Signal Processing: A System-on-Chip Perspective."** *MDPI Micromachines*, 2026, 17(1), 51. <https://doi.org/10.3390/mi17010051>. **(109 views, 4 January 2026).**

34) Cirstea, M., Benkrid, K., Dinu, A., Ghiriti, R., Petreus, D. **"Digital Electronic System-on-Chip Design: Methodologies, Tools, Evolution, and Trends."** *MDPI Micromachines*, 2024, 15, 247. <https://doi.org/10.3390/mi15020247>. **(6,000+ views, 65 citations July 2025, Google Scholar).**

33) Petreus, D., Patarau, T., Szilagyi, E., Cirstea, M. N.: **"Electrical Vehicle Battery Charger Based on Smart Microgrid"**, *MDPI Energies*, 2023, 16(9), 3853; <https://doi.org/10.3390/en16093853>

32) Hazzaa, F., Shabut, A.M., Ali, N.H.M., Cirstea, M.: **"Security Scheme Enhancement for Voice over Wireless Networks"**, *Journal of Information Security and Applications*, 58 (2021), DOI: 10.1016/j.jisa.2021.102798.

31) Monmasson, E., Hilaiet, M., Spagnuolo, G., Cirstea, M.N.: **"System-on-Chip FPGA Devices for Complex Electrical Energy Systems Control"**, *IEEE Industrial Electronics Magazine*, 19 Feb. 2021. DOI: 10.1109/MIE.2021.3052179.

30) Neacsu, D.O., Cirstea, M.N., Butnicu, D.: **"Comparative Reliability Analysis for Resonant Converter Operation under Component Ageing"**, *IEEE Journal of Emerging and Selected Topics in Industrial Electronics*, vol.2, issue 2, pp. 142-154, April 2021, print ISSN: 2687-9735, online ISSN: 2687-9743. DOI: 10.1109/JESTIE.2020.3044515.

29) Balan, A., Balan, T., Cirstea, M., Sandu, F.: **"A PUF-based cryptographic security solution for IoT systems on chip."** *EURASIP Journal on Wireless Communications and Networking* (EURASIP JWCN), Springer, 4 Nov. 2020, 231 (2020), USA. <https://doi.org/10.1186/s13638-020-01839-6>

28) Gherman, T., Petreus, D., Cirstea, M. N.: **"A Real Time Simulator of a Phase Shifted Converter for High Frequency Applications"**, *Advances in Electrical and Computer Engineering*, ISSN: 1582-7445, e-ISSN: 1844-7600, vol. 20, issue 3, pp. 11 - 22, August 2020, doi: [10.4316/AECE.2020.03002](https://doi.org/10.4316/AECE.2020.03002).

27) Petreus, D., Patarau, T., Etz, R., Cirstea, M.: **"An islanded microgrid energy management controller validated by using Hardware-In-the-Loop Emulators"**, *Int. Journal of Electrical Power and Energy Systems*, Elsevier, Vol. 106, March 2019, Pages 346-357, doi.org/10.1016/j.ijepes.2018.10.020.

26) Petreus, D., Daraban, S., Cirstea, M.: **"Modular Hybrid Energy Concept Employing a Novel Control Structure Based on a Simple Analog System"**, *Advances in Electrical and Computer Engineering*, ISSN: 1582-7445, e-ISSN: 1844-7600, vol. 16, issue 2, pp. 3-10, May 2016, DOI: 10.4316/AECE.2016.02001.

25) Stanciu, A., Cirstea, M.N., Moldoveanu, F.: **"Analysis and Evaluation of PUF-based SoC Designs for Security Applications"**, *IEEE Transactions on Industrial Electronics*, vol. 63, issue 9, pp. 5699-5708, Sept. 2016, ISSN: 0278-0046. DOI: [10.1109/TIE.2016.2570720](https://doi.org/10.1109/TIE.2016.2570720).

24) Folea, S., Mois, G., Muresan, C., Miclea, L., De Keyser, R., Cirstea, M.N.: **"A Portable Implementation on Industrial Devices of a Predictive Controller using Graphical Programming"**, *IEEE Transactions on Industrial Informatics*, Vol. 12, No. 2, April 2016, pp.736-744. DOI: 10.1109/TII.2016.2532118.

23) Monmasson, E., Cirstea, M.N.: **"Industrial Control Applications of FPGAs"**, *IEEE Transactions on Industrial Informatics*, Vol.9, No.3, Aug.2013, pp.1250-1252, DOI: [10.1109/TII.2013.2270011](https://doi.org/10.1109/TII.2013.2270011) editorial review.

22) Sutikno, T, Nik Idris, N. R., Jidin, A., Cirstea, M.N.: **"An improved FPGA Implementation of Direct Torque Control for Induction Machines"**, *IEEE Transactions on Industrial Informatics*, Vol. 9, No. 3, August 2013, pp.1280-1290. DOI: [10.1109/TII.2012.2222420](https://doi.org/10.1109/TII.2012.2222420)

21) Barote, L., Marinescu, C., Cirstea, M.N.: **"Control structure for Single Phase Stand-Alone Wind Based Energy Sources"**, *IEEE Trans. on Ind. Electronics*, vol.60, Issue 2, February 2013, pp. 764-772, ISSN: 0278-0046, DOI: 10.1109/TIE.2012.2206346.

20) Tisan, A., Cirstea, M.N.: **"SOM Neural Network Design – A New Simulink Library Based Approach Targeting FPGA Implementation"**, *Journal of Mathematics and Computers in Simulation*, Elsevier, [Volume 91](#),

May 2013, pp. 134–149, ISSN: 0378-4754. <http://authors.elsevier.com/sd/article/S0378475412001139> DOI: [10.1016/j.matcom.2012.05.006](https://doi.org/10.1016/j.matcom.2012.05.006)

19) Alecsa, B., Cirstea, M.N., Onea, A.: **"Simulink Modeling and Design of an Efficient Hardware-constrained FPGA-based PMSM Speed Controller"**, IEEE Transactions on Industrial Informatics, Vol. 8, Issue 3, pp.554-562, 2012. DOI: 10.1109/TII.2012.2193891.

18) Monmasson, E., Idkhajine, L., Cirstea, M.N., Bahri, I., Tisan, A., Naouar, W.: **"FPGAs in Industrial Control Applications"**, IEEE Transactions on Industrial Informatics, vol. 7., no. 2, pp. 224-244, May 2011, ISSN 1551-3203, DOI: 10.1109/TII.2011.2123908. **649 citations (July 2025, Google Scholar).**

17) Dinu, A., Cirstea, M.N., Cirstea, S.E.: **"Direct Neural Networks Hardware Implementation Algorithm"**, IEEE Trans. on Ind. Electronics, vol. 57, no. 5, May 2010, pp.1845-1848, ISSN: 0278-0046. DOI: 10.1109/TIE.2009.2033097.

16) Cirstea M. N.: **"Sustainable Renewable Energy for Europe"**, *Projects* magazine, **British Publishers Ltd.**, April 2010, pp. 78-80, ISSN 2040-7335.

15) Asher, G.; Cecati, C.; Cirstea, M. N.; Monmasson, E., (2009), **"Special Section on 2008 International Symposium on Industrial Electronics, Cambridge"**, Guest Editorial, IEEE Transactions on Industrial Electronics, vol. 56, no. 10, April 2008, pp. 3995-3997. ISSN: 0278-0046. DOI: 10.1109/TIE.2009.2028671.

14) Monmasson, E., Cirstea, M.N., (2008), **"FPGAs Used in Industrial Control Systems – part II"**, Guest Editorial, IEEE Transactions on Industrial Electronics, vol. 55, no. 4, April 2008, pp. 1499-1500. ISSN: 0278-0046. DOI: 10.1109/TIE.2008.917141.

13) Monmasson, E., Cirstea, M.N., (2007), **"FPGAs Used in Industrial Control Systems – part I"**, Guest Editorial, IEEE Transactions on Industrial Electronics, vol. 54, no. 7, August 2007, pp. 1807-1809. ISSN: 0278-0046. DOI: 10.1109/TIE.2007.898278.

12) Cirstea, M.N., Dinu, A.: **"A VHDL Holistic Modelling Approach and FPGA Implementation of a Digital Sensorless Induction Motor Control Scheme"**, IEEE Trans. on Ind. Electronics, Special Issue on *FPGAs used in Industrial control Systems*, vol.54, no.4, Aug.'07, pp.1853-1864, ISSN 0278-0046. DOI: 10.1109/TIE.2007.898286.

11) 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. **17,704 full text views since 2011 (IEEE Xplore, July'25); 1,258 citations (Google Scholar, July'25).**

10) Rana M.M., Reynolds T., Cirstea M.N., Entecott A., Jones. S. G.: **"Transforming the lives of visually impaired people through semantic web services"**, Int. Journal of Technology, Knowledge & Society, vol. 3, issue 3, Aug.'07, ISSN 1832-3669, <http://ijt.cgpublsher.com/product/pub.42/prod.355>.

9) Dinu, A., Cirstea, M.N.: **"A Novel Digital Neural Network Hardware Implementation Technique Targeting FPGAs"**, Journal of Electrical Engineering, no.4, vol.6, 2006, pp.103-120, ISSN 1582-4594.

8) Cirstea M. N.: **"Electronic SOCs. An Integrated modelling and design approach"**, *EuroAsia semiconductor*, November 2006, pp. 45-48.

7) Cirstea, M.N.: **"Electronic Systems Integrated Modelling and Optimised Digital Controller Prototyping – a Novel (HDL) Approach"**, IEEE Industrial Electronics Society Newsletter, vol.52, no. 3, September 2005, pp.11-13, ISSN 0746-1240.

6) Cirstea M.N.: **"Power Electronic Systems VHDL Modelling and FPGA Controller Prototyping"**, the *Electrotechnical Review Journal (Przegląd Elektrotechniczny)*, R.81, no.4, Warsaw, Poland, 2005, pp. 16-20, PL ISSN 0033-2097.

5) Cirstea, M.N.: **"Problem Based Learning in Microelectronics"**, Int. Journal of Eng. Education, Vol. 19, No.5, 2003, pp.738-741, ISSN:0949-149X

4) Dinu, A., Cirstea, M.N., McCormick, M., Ometto, A. and Rotondale, N.: **"Sensorless Induction Motor Control Strategy Optimised for FPGA Hardware Implementation"** Journal of Electrical Engineering, no.1, vol.1, 2001, pp.26-31, ISSN 1582-4594.

3) Nicula, D., Cirstea, M.N.: **"Successful CAD Tools Application to FPGA/ASIC Design"**, Int. Journ. of Eng. Education, Vol.15, No.1, 1999, pp.72-76

2) Patterson, E.B., Cirstea, M.N., Morley, D. and Oswald, C.: **"Concurrent Engineering - A Modern Approach to a System Design."**, "Advances in Design and Manufacturing"-Concerted Efforts for Europe-Published by the EC DG iii, 1995, Vol.6, Ch.43, pp.179-188

1) Cirstea, M.N., Patterson, E.B., Morley, D., Koczara W., Przybylski, J.: **"Electronic Design Automation Techniques Transferred to Central / Eastern Europe"**, "Advances in Design and Manufacturing"-Concerted Efforts for Europe - EC DG iii, 1995, Vol.6, Ch.43, pp.85-92.

PUBLISHED REFEREED CONFERENCE PAPERS (English, in reverse chronological order):

122) R. Dinita, G. Wilson, M. Cirstea: **"Novel Autonomous Software for Enhanced Datacenter Operational Efficiency and Botnet Detection"**, Proc. of IEEE Int. Conf. on Ind. Electronics (IECON'23), Singapore, Oct. 2023, doi: 10.1109/IECON51785.2023.10311667.

- 121) Petreus, D., Patarau, T., Etz, R., Cirstea, M.: **"Renewable Energy EV Charging Station"**, Proc. of IEEE Int. Conf. ACEMP-OPTIM, Brasov, Romania, online, 2-3 Sept. 2021. [10.1109/OPTIM-ACEMP50812.2021.9590053](https://doi.org/10.1109/OPTIM-ACEMP50812.2021.9590053)
- 120) O'Reilly, J., Cirstea, S., Cirstea, M., Zhang, J.: **"A Novel Development of Acoustic SLAM"**, Proc. of IEEE Joint Int. Conference ACEMP-OPTIM, Istanbul, Turkey, 26-29 August 2019. [10.1109/ACEMP-OPTIM44294.2019.9007217](https://doi.org/10.1109/ACEMP-OPTIM44294.2019.9007217).
- 119) F. Hazzaa, S. Yousef, E. Sanchez, M. Cirstea: **"Lightweight and Low-Energy Encryption Scheme for Voice over Wireless Devices"**, Proc. of IEEE Int. Conf. on Ind. Electronics (IECON'18), Washington, USA, Oct. 2018, pp.2992-2997. <https://doi.org/10.1109/IECON.2018.8591451>
- 118) S. Sadeghi-Esfahlani, S. Cirstea, A. Sanaei, M. Cirstea: **"Fire detection of Unmanned Aerial Vehicle in a Mixed Reality-based System"**, Proc. of IEEE Int. Conf. on Ind. Electronics (IECON'18), Washington DC, USA, Oct. 2018, pp.2757-2762. DOI: [10.1109/IECON.2018.8592764](https://doi.org/10.1109/IECON.2018.8592764)
- 117) Constantinou, G., Wilson, G., Sadeghi-Esfahlani, S., Cirstea, M.N.: **"An Effective Approach to the Use of 3D Scanning Technology which Shortens the Development Time of 3D Models"**. Proc. of IEEE Joint Int. Conference OPTIM-ACEMP, Brasov, Romania, May 2017, pp.1083-1088, DOI: [10.1109/OPTIM.2017.7975116](https://doi.org/10.1109/OPTIM.2017.7975116).
- 116) Lelutiu, L.M., Lungoci, C.M., Calin, M.D., Cirstea, M.N.: **"A Power Efficient Mobile Solar Tracking System"**, Proc. of IEEE Joint Int. Conference OPTIM-ACEMP 2017, Brasov, Romania, May 2017, pp.561-566, DOI: [10.1109/OPTIM.2017.7975028](https://doi.org/10.1109/OPTIM.2017.7975028)
- 115) Darvill, J., Tisan, A., Cirstea, M.N.: **"A Novel ANFIS Architecture for FPGA Implementation"**, Proc. of IEEE Int. Conf. on Industrial Electronics (ISIE 2017), Edinburgh, UK, 19-21 June 2017, pp. 1244- 1248, DOI: [10.1109/ISIE.2017.8001423](https://doi.org/10.1109/ISIE.2017.8001423)
- 114) Stanciu, A., Cirstea, M.N., Moldoveanu, F.: **"A Novel PUF-Based Encryption Protocol For Embedded System On Chip"**, Proceedings of the 13th IEEE International Conference on Development and Application Systems, Suceava, Romania, May 2016, pp.158-165. DOI: 10.1109/DAAS.2016.7492566
- 113) Cirstea, M.N.: **"Modeling and Design of Digital Electronic Systems"**, Proc. of IEEE Int. Conference on Development and Application Systems, Suceava, Romania, May 2016, pp.189-194. **Keynote presentation.** DOI: 10.1109/DAAS.2016.7492596
- 112) Darvill, J., Tisan, A., Cirstea, M.N.: **"An ANFIS-PI Based Boost Converter Control Scheme"**, Proc. of IEEE Int. Conference on Industrial Informatics (INDIN 2015), Cambridge, UK, July 2015, pp. 632 - 639, DOI: 10.1109/INDIN.2015.7281809.
- 111) Kimmitt, J., Greaves, D., Cirstea, M.N.: **"A toolchain for safety-critical embedded programming using FPGAs"**, Proc. of IEEE Int. Conference on Industrial Informatics (INDIN 2015), Cambridge, UK, July 2015, pp. 848 - 855, DOI: 10.1109/INDIN.2015.7281847.
- 110) Folea, S., Mois, G., Muresan, C., Miclea, L., De Keyser, R, Cirstea, M.N.: **"Implementation of an Extended Prediction Self-Adaptive Controller using LabVIEW"**, Proc. of IEEE Int. Conference on Industrial Informatics (INDIN 2015), Cambridge, UK, July 2015, pp. 883 - 888, DOI: 10.1109/INDIN.2015.7281852.
- 109) Darvill, J., Tisan, A., Cirstea, M.N.: **"A Novel PSIM and Matlab Co-Simulation Approach to Particle Swarm Optimization Tuning of PID Controllers"**, Proc. of IEEE Int. Conference on Optimisation of Electrical and Electronic Equipment (OPTIM 2014), Brasov, Romania, May 2014, pp.784-789, DOI: 10.1109/OPTIM.2014.6850876.
- 108) Dinita, R., Wilson, G., Winckles, A., Cirstea, M.N., Jones, A.: **"A Novel Autonomous Management Distributed System for Cloud Computing Environments"**, Proc. of IEEE Int. Conference on Industrial Electronics (IECON 2013), Vienna, Austria, 11-15 Nov.2013, pp.5618-5623.
- 107) Gomes, L, Monmasson, E., Cirstea, M.N., Rodriguez-Andina, J.J.: **"Industrial Electronic Control: FPGAs and Embedded Systems as System-on-Chip Solutions"**, Proc. of IEEE Int. Conference on Industrial Electronics (IECON 2013), Vienna, Austria, 11-15 Nov.2013, pp.60-65.
- 106) Dinita, R., Wilson, G., Winckles, A., Cirstea, M.N., Jones, A.: **"Hardware Loads and Power Consumption in Cloud Computing Environments"**, Proc. of IEEE Int. Conference on Information Technology (ICIT 2013), Cape Town, South Africa, 25-28 Feb. 2012, pp.1291-1296.
- 105) Dinita, R., Wilson, G., Winckles, A., Cirstea, M.N., Jones, A.: **"A Cloud-based Virtual Computing Laboratory for Teaching Computer Networks"**, Proc. of IEEE Int. Conference on Optimisation of Electrical and Electronic Equipment (OPTIM 2012), Brasov, Romania, 24-25 May 2012, pp.1314-1318.
- 104) Barrett, J., De Souza, Cirstea, M.N., Cirstea, S.: **"Analytical Techniques for the Simulation of Electron Transport in Semiconductor Systems"**, Proc. of IEEE Int. Conference on Optimisation of Electrical and Electronic Equipment (OPTIM 2012), Brasov, Romania, 24-25 May 2012, pp.822-826.
- 103) Gadde, Y, Cirstea, M.N., Toulson, R., Allingham, E.: **"An Optimised Development Model for High Volume Electronic Products"**, Proc. of IEEE Int. Conference on Optimisation of Electrical and Electronic Equipment (OPTIM 2012), Brasov, Romania, 24-25 May 2012, pp.1325-1330.
- 102) Patarau, T., Petreus, D., Etz, R., Cirstea, M.N., Daraban, S.: **"Digital Control of Bidirectional DC-DC Converters in Smart Grids"**, Proc. of IEEE Int. Conference on Optimisation of Electrical and Electronic Equipment (OPTIM 2012), Brasov, Romania, 24-25 May 2012, pp.1553-1558.
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