

# Ahmad A. Hiasat

## • Education

- 1995: PhD in Systems Engineering, Oakland University, MI, USA.
- 1988: M. Sc. in Communications Engineering, University of Jordan.
- 1984: B. Sc. in Electrical Engineering, University of Jordan, Jordan.

## • Experience

- 2012-Now: Faculty member, Princess Sumaya University for Technology (PSUT). Vice-President in 2012/2013 and acting president occasionally.
- 2011- 2012: Chairman and CEO of Electricity Regulatory Commission (ERC) of Jordan.
- 2006- 2010: Chairman and CEO of Telecomm. Regulatory Commission (TRC) of Jordan.
- 1996-2006: Faculty member at PSUT, Dean of Engineering School 2004-2006.
- 1999-2006 and 2015-2018: Part-Time Consultant/Advisor to the Minister/Ministry of Education (MOE) on its project “Education Reform for Knowledge Economy”.
- 1993-1995: PhD candidate in Systems Engineering, Oakland University, MI, USA.
- 1985-1993: Communications Engineer and Officer, Royal Jordanian Air Force (RJAF).

## • Awards

- 2021: ranked among the World’s Top 2% Scientists based on Stanford University and Elsevier BV classifications.
- 2020: ranked among the World’s Top 2% Scientists based on Stanford University and Elsevier BV classifications.
- 2000: Ministry of Culture Award for Regionally Distinguished Performers.
- 1999: Abd Al-Hamid Shoman Award for Young Arab Researchers in the Arab World.
- 1995: Oakland University Award for distinguished academic performance.
- 1994: Oakland University Award for distinguished academic performance.
- 1988: King Hussein’s Award for distinguished academic performance at the M. Sc. level (ranked at the top of the class which graduated in 1988).
- 1984: King Hussein’s Award for distinguished academic performance at the B. Sc. level (ranked at the top of the class which graduated in 1984).
- 1979: Ministry of Education Award for distinguished academic performance in the General High School Exam (ranked the 10<sup>th</sup> among more than 70,000 students).

## • Academic and Professional Tasks, Responsibilities, and Accomplishments

- 1985-1993: Communications Engineer - Air Defense Operations Centers at RJAF, including a classified R&D experience.
- 1993-1995: Research and Teaching Assistant during my PhD program.
- 1996-2006 and 2013-Now : Professor of Computer Engineering at PSUT. Activities include:
  - \* Teaching different Computer/Electrical Engineering courses
  - \* Conducting research in different research areas and published more than 50 research papers in the most prestigious international scientific journals and conferences. For details, please refer to the list of publications below.
  - \* Maintaining high caliber of teaching and research.
  - \* Building good relationships with other universities, societies, companies, international institutions and other bodies.
  - \* Introducing new technologies, upgrading study plans, etc.
  - \* Participating in formulating university's strategic and action plans.
- 1996 until now: Attended and contributed to dozens of conferences on Computer/Electrical Engineering, ICT, Energy, Scientific Research Development, and Education Reform. I also chaired a few of these conferences and successfully raised some funding from local and international entities.
- 1997-1998: A Visiting Professor at Oakland University, MI, USA.
- 2001: Promoted to Associate-Professor.
- 2002: Spent a full semester at Rensselaer Polytechnic Institute (RPI), NY, USA, to learn and get experience on entrepreneurship and technology innovation management. This experience was gained by registering for relevant courses and attending & participating in many activities at the Incubators and the Technology Park of RPI.
- 2002 until now: Conducting consultancy services in ICT, Energy, and Education and Higher Education Reform for international agencies, organizations, and companies, such as, Intel Corporation, Astec Global, UNESCO, European Commission, and the World Bank.
- 2002-2005: Attended many international conferences and competitions on entrepreneurship and transferred this knowledge to PSUT and other Jordanian Universities.
- 2005: Promoted to Full-Professor.
- 2006-2010: While heading the TRC, significant progress in Telecom Sector indicators were achieved:
  - \* Mobile Service penetration raised from 55% to 105%.
  - \* Internet user penetration raised from 13% to 52%.
  - \* Total Annual Telecom operators' revenue raised from 1.05 to 1.55 Billion US\$.
  - \* Classifying TRC to be the best regulator in the MENA region in 2008-2009.
- 2011-2012: While heading the ERC, the following accomplishments were achieved:
  - \* Drafted Renewable Energy and Energy Efficiency Law of Jordan and drafted Energy Efficiency Bylaw of Jordan.
  - \* Issued instructions, directives and guidelines for renewable energy and energy efficiency following best international standards.

- \* Promoted the use of renewable energy and energy efficiency measures among different energy consumers.
- \* Evaluated all proposals for investment in renewable energy sector in collaboration with Ministry of Energy and awarded the best ones based on offered tariff, commercial sustainability, and environmental impact.
- 2015: General Chair for the IEEE AEECT 2015 conference, Nov. 3-5, 2015.
- 2015-now: Editor-in-Chief of the Jordanian Journal of Computers and Information Technology (JJCIT) [www.jjcit.org](http://www.jjcit.org). This is an international peer-reviewed and open-access journal fully supported by the Scientific Research Support Fund of Jordan (first issue released in Dec. 2015).
- Attended, participated and/or refereed a few entrepreneurship competitions such as:
  - \* MIT \$50K Entrepreneurship Competition Awards at University of Cambridge, UK.
  - \* Annual MIT \$50K Global Startup Workshop, UAE.
  - \* Entrepreneurship Competition Awards at the Queen Rania Center for Entrepreneurship, Jordan.
- Served as a part-time consultant and/or referee for many relevant organizations in Jordan such as:
  - \* The Higher Council for Science and Technology, Jordan.
  - \* The National Center for Human Resources Development, Jordan.
  - \* The National Center for Research and Development, Jordan.
  - \* The Scientific Research Support Fund, Jordan.
- Permanent reviewer/referee for the Institute of Electrical and Electronics Engineers (IEEE), USA (IEEE is a global community to innovate for a better tomorrow through highly cited publications, conferences, technology standards, and professional and educational activities.)
- Part-Time Consultant/Advisor to the Minister/Ministry of Education (MOE), Jordan, on Ministry’s Main Project: “Education Reform for Knowledge Economy” (ERfKE). Duties and achievements included, but not limited to:
  - \* Participated in formulating strategies and action plans of MOE’s ERfKE project.
  - \* Worked thoroughly on the implementation of Teacher Training programs. This included setting and overseeing the implementation plans for:
    - Teacher Computer Literacy training programs such as ICDL.
    - Teacher Professional Development Programs (Intel Teach to the Future, World Links, ...etc).
    - Proposed and implemented Teacher Promotion and Ranking System.
  - \* Studied and evaluated the impact of different international programs for professional development, such as: “Intel Teach to the Future” and “World Links”.
  - \* Represented the MOE in meetings with different ERfKE stakeholders: Donors, Sponsors, NGOs and companies (USAID, CIDA, Microsoft, World Links, Motorola, HP, ... etc).
  - \* Participated in evaluating different e-curriculum, e-content, e-portal, MIS systems, ... etc.

- Conducted a study titled “ICT in Education Polices of Rwanda, Namibia, Uruguay, Jordan, and Singapore: A Comparative Study,” for the United Nations Educational, Scientific and Cultural Organization (UNESCO).
- Conducted few studies for a regional MEDA (Mennonite Economic Development Associates) project supported by the European Commission called “Education and Training for Employment”.

#### • Selected Journal Research Articles

- A. Hiasat, “An arithmetic scaler circuit design for the expanded four-moduli set  $\{2^k - 1, 2^k + 1, 2^{2k} + 1, 2^{2k}\}$ ,” Journal of Computers and Electrical Engineering, vol. 101, pages 108102, July 2022.
- A. Hiasat, “A Scaler Design for the RNS Three-Moduli  $(2^{n+1} - 1, 2^n, 2^n - 1)$  Based on Mixed-Radix Conversion,” Journal of Circuits, Systems and Computers, vol. 29, no. 3, March 2020.
- 2. A. Hiasat, “A Residue-to-Binary Converter with an Adjustable Structure for an Extended RNS Three-Moduli Set,” Journal of Circuits, Systems and Computers, vol. 28, no. 8, July 2019.
- A. Hiasat, “General modular adder designs for residue number system applications”, IET Circuits, Devices and Systems, (accepted DOI: 10.1049/iet-cds.2017.0470), to appear in July/September 2018.
- A. Hiasat and L. Sousa, “On the Design of RNS Inter-Modulo Processing Units for the Arithmetic-Friendly Moduli Sets  $\{2^n + k, 2^n - 1, 2^{n+1} - 1\}$ ,” The Computer Journal (the British Computer Society), vol. 61, Feb. 2019.
- A. Hiasat and L. Sousa, “Sign Identifier for the Enhanced Three Moduli Set  $\{2^n + k, 2^n - 1, 2^{n+1} - 1\}$ ”, Journal of Signal Processing Systems, vol. 91, No. 1, pp 953-961, Jan. 2019.
- A. Hiasat, “Sign detector for the extended four-moduli Set”, IET Computers and Digital Techniques, vol. 12, no. 2, pp. 39 –43, March 2018.
- A. Hiasat, “An Efficient Reverse Converter for the Three-Moduli Set  $(2^{n+1} - 1, 2^n, 2^n - 1)$ ” IEEE Trans. on Circuits and Systems TCAS-II, vol. 64, no. 8, pp 962-966, August 2017.
- A. Hiasat, “A Residue-to-Binary Converter for the Extended Four-Moduli Set  $\{2^n - 1, 2^n + 1, 2^{2n} + 1, 2^{2n+p}\}$ ,” IEEE Transactions on Very Large Scale Integration (VLSI) Systems, vol. 25, no. 7, pp 2188-2192, July 2017.
- A. Hiasat, “Efficient RNS scalers for the extended three-moduli set  $(2^n - 1, 2^{n+p}, 2^n + 1)$ ,” IEEE Transactions on Computers, vol. 66, no. 7, pp 1253-1260, July 2017.
- A. Hiasat, “A Reverse Converter and Sign Detectors for an Extended RNS Five Moduli Set” IEEE Trans. on Circuits and Systems TCAS-I, vol. 64, no. 1, pp 111-121, Jan. 2017.
- A. Hiasat, “A Sign Detector for a Group of Moduli,” IEEE Transactions on Computers, vol. 65, no. 12, pp 3580 -3590 , Dec. 2016.
- N. Abu-Shikhah, A. Hiasat, W. Al-Rabadi, “A photovoltaic proposed generation promotion policy — The case of Jordan”, Energy Policy, vol. 49, no. 1, pp 154–163, October 2012.
- A. Hiasat, “VLSI Implementation of New Arithmetic Residue to Binary De- coders,” IEEE Trans. on Very Large Scale Integ. (VLSI) Systems, vol. 13, No. 1, pp 153-158, Jan. 2005.

- A. Hiasat, “A Suggestion for a New RNS-based Multiplier for a Family of Moduli,” International J. of Computers and their Applications, vol. 11, no. 2, pp. 92-97, June 2004.
- A. Hiasat and A. Sweidan, “Residue to Binary Decoder for an Enhanced Moduli Set,” IET Proceedings: Computers and Digital Techniques, vol. 151, no. 2, March 2004.
- O. Hasan, and A. Hiasat, “Limiter Discriminator Detection of Narrow-Band Doubinary FSK in a Land Mobile Channel,” the International Journal of Communication Systems, vol. 17, no. 1, pp 85-97, February 2004.
- A. Hiasat, “A Suggestion for Fast Residue Multiplier for a Family of Moduli of the form  $(2^n - (2^p + 1))$ ,” The Computer Journal (The British Computer Society), Volume 47, Issue 1, pp. 93-102, January 2004.
- A. Hiasat, “Arithmetic binary to residue encoders for moduli  $(2^n \pm (2^p + 1))$ ,” IET Proceedings: Computers and Digital Techniques, vol. 150, no. 6, pp 369-374, Nov. 2003.
- A. Hiasat and O. Hasan, “Bit-serial Architecture for Rank Order and Stack Filters,” INTEGRATION, the VLSI Journal, Elsevier Science, Vol. 36, no. (1-2), pp 3-12, Sep. 2003.
- A. Hiasat and A. Sweidan, “Residue Number System to Binary Converter for the Moduli Set  $(2n-1, 2n-1, 2n+1)$ ,” J. of Systems Arch., vol. 49, no. (1-2), pp. 53-58 Aug. 2003.
- A. Hiasat, “New digital sweep oscillator structures,” IET Proceedings: Circuits, Devices and Systems, vol. 150, no. 3, pp 179-184, June 2003.
- A. Hiasat, “Efficient residue to binary converter,” IET Proceedings: Computers and Digital Techniques, Vol. 150, No. 1, pp 11-16, January 2003.
- A. Hiasat, “High-Speed and Reduced-Area Modular Adder Structures for RNS,” IEEE Transactions on Computers, Vol. 51, No. 1, pp 84-89, January 2002.
- A. Sweidan and A. Hiasat, “On the theory of error control based on moduli with common factors,” Journal of Reliable Computing, vol. 7, issue 4, p 209-218, July 2001.
- A. Hiasat, “RNS Arithmetic Multiplier for Medium and Large Moduli,” IEEE Transactions on Circuits and Systems, Part II, pp 937-940, September 2000.
- A. Hiasat, “New efficient structure for a modular multiplier for RNS,” IEEE Transactions on Computers, Vol. 49, No. 2, pp 170-174, February 2000.
- A. Hiasat, M. Al-Ibrahim and K. Garaibeh, “Design and implementation of a new median filtering algorithm,” IET Proceedings: Vision, Image and signal Processing, vol. 146, no. 5, pp 273-278, October 1999.
- A. Hiasat and A. Al-Khateeb, “New high-resolution digital sinusoidal oscillator structure with extremely low frequency and sensitivity,” Int’l J. of Electronics, vol. 86, No. 3, , pp 287-296, March 1999.
- A. Hiasat and H. Zohdy, “Combinational logic approach for implementing An improved approximate squaring function” IEEE Journal of Solid State Circuits, vol. 34, no. 2, pp 236-240, February 1999.
- A. Hiasat and A. Al-Khateeb, “Efficient digital sweep oscillator with extremely low sweep rates,” IET Proceedings: Circuits, Devices and Systems, vol. 145,no. 6, pp 409-414, December 1998.
- A. Hiasat and H. Zohdy, “Semi-Custom VLSI design and implementation of a new efficient RNS division algorithm,” The Computer Journal, vol. 42, no. 3, pp 232-240, 1999.

- A. Hiasat, “New designs for a sign detector and a residue to binary converter, ” IET Proceedings: Circuits, Devices and Systems, pp 477-482, August 1993.
- A. Hiasat, “New memoryless mod  $(2^n \pm 1)$  residue multiplier,” IET Electronics Letters, vol. 28, no. 3, pp 314-315, January 1992.
- A. Sweidan and A. Hiasat, “New efficient memoryless residue to binary converter, ” IEEE Transactions, CAS-35, pp 1441-1444, November 1988.