Assoc. Prof. H. Al-Hmood, PhD, CEng

Curriculum Vitae

PERSONAL DETAILS

Birth	April 19, 1982
Home Address	Nassiriya City, Thi-Qar Governorate, Iraq
Mailing Address	Electrical and Electronic Engineering Department, College of Engineering, University of Thi-Qar, Al-Mostafaweah, Nassiriya City, Thi-Qar, Iraq
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Nationality	Iraqi
Domicile	Nassiriya City, Thi-Qar Governorate

PERSONAL WEBPAGES

Google scholar	https://scholar.google.com/citations?user=XuPd2r8AAAAJ&hl=en&oi=ao
Research gate	https://www.researchgate.net/profile/Hussien_Al-Hmood
Google Site	https://sites.google.com/eng.utq.edu.iq/drhussienal-hmood/home
Academia.edu	https://independent.academia.edu/AlHmood
LinkedIn	https://www.linkedin.com/in/dr-hussien-al-hmood-b2738794/
Facebook	https://www.facebook.com/hussien.abdalmohssien

EDUCATION

PhD in Communications Engineering 2011 - 2015

Electronic and Computer Engineering (ECE) Department, College of Engineering, Design and Physical Sciences, Brunel University London, UK

Thesis Title: Performance Analysis of Energy Detector over Generalized Wireless Channels in Cognitive Radio

MSc in Electronic and Communications Engineering 2005 - 2007

Electrical Engineering (EE) Department, College of Engineering, Baghdad University, Iraq

Thesis Title: A Slantlet Transform Based MC-CDMA System over Wireless Channels
Average: 79.066%

BSc in Electrical Engineering 2001 - 2005

Electrical Engineering (EE) Department, College of Engineering, Baghdad University, Iraq

Undergraduate Project Title: Firewall Design and Implementation
Average of 4 Years: 74.390%
Ranking: 4th of 98 Students

Matriculation 1997 - 2001

Al-Gamhureya for Boys

Total: 602/700

WORK EXPERIENCE

University of Thi-Qar, Iraq Oct. 2018 - To present

College of Engineering

Lecturer at the Electrical and Electronic Engineering (EEE) department.

University of Thi-Qar, Iraq Nov. 2016 - Oct. 2018

College of Engineering

Head of the EEE department.

University of Thi-Qar, Iraq Aug. 2015 - Oct. 2016

College of Engineering

Lecturer at the EEE department.

Brunel University London, UK Jan. 2011 - July 2015

College of Engineering, Design and Physical Sciences

Pursuing to obtain the PhD degree in communications engineering and working as a lab assistant during the same period.

University of Thi-Qar, Iraq Oct. 2007 - Dec. 2010

Colleges of Engineering and Sciences

Lecturer at the Computer Science (CS) and EEE departments.

University of Thi-Qar, Iraq Sept. 2006- Sept. 2007

College of Sciences

Technical engineer at the labs of the CS department.

TEACHING AREAS AND SUPERVISION

I have taught the freshman, sophomore, junior, and senior years the following subjects:

- Digital communications systems
- Digital signal processing
- Information theory
- Object oriented programming using MATLAB, MATHEMATICA, AND C++

- Advanced mathematics
- Artificial intelligence methods: Fuzzy logic, neural networks, and genetic algorithm

RESEARCH ACTIVITIES AND INTERESTS

Dr. Al-Hmood has served as a volunteer in organization committee of international conference on communications (ICC) that took place in London, UK on 8-12 June 2015. In addition, he is a reviewer for many top international conferences and high quality scientific journals such as IEEE Transactions on Vehicular Technology (TVT), IEEE Transactions on Communications (TCOM), IEEE Transactions on Wireless Communications (TWC), IEEE Wireless Communications Letters (WCL), IEEE Communications Letters (CL), IEEE Access, Electronics Letters (EL), and IEEE Signal Processing Letters (SPL).
Dr. Al-Hmood research interests include:

- Physical layer security of communications systems
- Millimetre wave for 5G
- Coexistence of licensed and unlicensed communications systems
- Statistical characterizations of wireless fading channels
- Signal processing for digital communications
- Estimation and detection techniques
- Cognitive radio and cooperative communications networks
- Diversity combining schemes and MIMO systems
- Non-orthogonal multiple access (NOMA) technique
- Simultaneous wireless information and power transfer (SWIPT)

PUBLICATIONS

Dr. Al-Hmood has published many papers in high quality scientific journals and conferences. His list of publications are as follows:

Refereed Journal Articles

[1] H. Al-Hmood and H. S. Al-Raweshidy "Performance Analysis of Physical Layer Security over Fluctuating Beckmann Fading Channels," Accepted *IEEE Access*, Aug. 2019.
[2] H. Al-Hmood and H. S. Al-Raweshidy "Exact closed-form capacity and outage probability of physical layer security in $\kappa - \mu$ shadowed fading channels," Accepted *IET Commun.*, Aug. 2019.
[3] H. Al-Hmood and H. S. Al-Raweshidy, "Unified approaches based effective capacity analysis over composite $\alpha - \eta - \mu$/gamma fading channels," *Elect. Lett.*, vol. 54, no. 13, pp. 852-853, June 2018.
[4] M. Al-Saedy, H. S. Al-Raweshidy, **H. Al-Hmood**, and F. Haider, "Coverage and effective capacity in downlink MIMO multicell networks with power control: Stochastic geometry modeling," *IEEE Access*, vol. 6, pp. 9173-9185, Jan. 2018.
[5] H. Al-Hmood and H. S. Al-Raweshidy, "Analysis of energy detection with diversity

receivers over non-identically distributed $\kappa - \mu$ shadowed fading channels," *Elect. Lett.*, vol. 53, no. 2, pp. 83-85, Jan. 2017.

[6] H. Al-Hmood and H. S. Al-Raweshidy, "Unified modeling of composite $\kappa-\mu$/gamma, $\eta - \mu$/gamma, and $\alpha - \mu$/gamma fading channels using a mixture gamma distribution with applications to energy detection," *IEEE Antennas and Wireless Propagation Lett.*, vol. 16, pp. 104-108, Feb. 2017.

[7] H. Al-Hmood and H. S. Al-Raweshidy, "On the sum and the maximum of non-identically distributed composite $\eta - \mu$/gamma variates using a mixture gamma distribution with applications to diversity receivers," *IEEE Trans. Veh. Technol.*, vol. 65, no. 12, pp. 10048-10052, Dec. 2016.

[8] H. Al-Hmood and H. S. Al-Raweshidy, "Performance analysis of energy detector over $\eta - \mu$ fading channel: PDF-based approach," *Elect. Lett.*, vol. 51, no. 3, pp. 249-251, Feb. 2015.

Refereed Conference Papers

[1] H. Al-Hmood, "Performance of cognitive radio systems over $\kappa - \mu$ shadowed with integer μ and Fisher-Snedecor $\mathcal{F}$ fading channels," in *Proc. IEEE IICETA*, Najaf, Iraq, May 2018.

[2] H. Al-Hmood, "Unified approach based performance analysis of MRC and SC schemes with arbitrarily distributed branches over composite fading channels," in *Proc. IEEE First Inter. Conf. on Recent Trends of Eng. Sciences and Sustainability (IJRTESS)*, Iraq, May 2017.

[3] H. Al-Hmood, "A mixture gamma distribution based performance analysis of switch and stay combining scheme over $\alpha - \kappa - \mu$ shadowed fading channels," in *Proc. IEEE New Trends in Info. and Commun. Technol. Applications (NTICT)*, Iraq, Mar. 2017.

[4] H. Al-Hmood, "Improvement of energy detection using threshold optimization and filter-bank transform based spectrum sensing of IEEE 802.22 WRAN standard," in *Proc. Second Scientific Inter. Conf. (SSIC)*, Iraq, Mar. 2017, pp. 95-102.

[5] H. Al-Hmood, "MGF based energy detection of unknown signals over $\kappa - \mu$ shadowed fading channels with diversity reception," in *Proc. Basra Inter. Conf. on Technol. (ICT)*, Iraq, Mar. 2016.

[6] H. Al-Hmood, and H. S. Al-Raweshidy, "Signal denoising using hybrid slantlet transform based energy detector in cognitive radios," in *Proc. IEEE IFIP Wireless Days (WD)*, Spain, Nov. 2013, pp. 1-3.

[7] H. Al-Hmood, and H. S. Al-Raweshidy, "Energy detection performance enhancement for cognitive radio using noise processing approach," in *Proc. IEEE Symp. on Global Info. Infrastructure (GIIS)*, Italy, Oct. 2013, pp. 1-6.

[8] H. Al-Hmood, R. S. Abbas, A. Masrub, and H. S. Al-Raweshidy, "An estimation of primary user's SNR for spectrum sensing in cognitive radios," in *Proc. Third Inter. IEEE Conf. Innovative Computing Technol. (INTECH)*, UK, Aug. 2013, pp. 479-484.

[9] A. Masrub, R. S. Abbas, **H. Al-Hmood**, M. Iqbal, and H. S. Al-Raweshidy, "Cooperative sensing for dynamic spectrum access in cognitive wireless mesh networks," in *Proc. IEEE Inter. Symp. on Broadband Multimedia Systems and Broadcasting (BMSB)*, UK, June 2013, pp. 1-5.

PROFESSIONAL MEMBERSHIPS

International	Institute of Electrical and Electronics Engineers (IEEE), IEEE communications society Institution of Engineering Technology (IET)
National	Dr. Al-Hmood is registered with the Iraqi Engineers Organization (IEO) as a chartered engineer since 2005

AWARDS AND HONORS

Awards	Fulbright U.S. scholar grant in 2017: Fulbright-university of Delaware scholar award, English language test center at Brunel University London for the best oral presentation in 2011
Honors	Iraqi ministry of higher education and scientific research for the researcher who publishes high quality papers and participates in many international conferences in 2015, Chancellor of University of Thi-Qar for the academic achievements (annually from 2015)

SKILLS

Languages	Arabic English
Engineering Software	MATLAB, MATHEMATICA, C++, NS3
Additional Software	MICROSOFT OFFICE (WORD, POWER POINT, EXCEL, VISIO), LaTeX

HOBBIES

Reading the historic stories,
Playing football and basketball,
Fishing