

Farshad Miramirkhani, Ph.D., SMIEEE

Assistant Professor (2019-Present)

Contact Information

Department of Electrical and Electronics Engineering

Isik University, Istanbul, Turkey, 34980

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Educations

✓ Ozyegin University, Istanbul, Turkey

Ph.D. in Electrical and Electronics Engineering (Optical Wireless Communications-Visible Light Communications), Department of Electrical and Electronics Engineering, 2014-2018.

Supervisor: Prof. Dr. Murat Uysal

✓ University of Isfahan, Isfahan, Iran

M.Sc. in Electrical and Electronics Engineering (Communication Engineering), Department of Electrical and Electronics Engineering, 2011-2014.

✓ University of Isfahan, Isfahan, Iran

B.Sc. in Electrical and Electronics Engineering, Department of Electrical and Electronics Engineering, 2007-2011.

Research Areas

OPTWiCOM Research Group is directed by Dr. Farshad Miramirkhani under the Department of Electrical and Electronics Engineering, Isik University, and conducts fundamental and applied research on the physical layer aspects of Optical Wireless Communications. Current research projects address physical layer design of indoor, vehicular and underwater visible light communications. Research interests of OPTWiCOM are optical wireless communication with a particular emphasis on channel modelling and characterization. Current research topics are listed in the following:

- ✓ Optical Wireless Communications
- ✓ Indoor VLC-based IoT with Light Energy Harvesting
- ✓ VLC-based Medical Body Sensor Networks
- ✓ Indoor Visible Light Communications
- ✓ Vehicular Visible Light Communications
- ✓ Underwater Visible Light Communications
- ✓ Infrared Communications

Publications

<i>Google Scholar</i>	<i>Citations</i>	2461	<i>Journal Papers</i>	24
			<i>Book Chapters</i>	2
	<i>h-index</i>	21	<i>IEEE Standard Contributions</i>	10
			<i>International Conference Papers</i>	22

✓ Journal Papers

[J-24] A. H. Dalloul, F. Miramirkhani, and L. Kouhalvandi, "A Review of Recent Innovations in Remote Health Monitoring", *Micromachines*, vol. 14, no. 12: 2157, pp. 1-22, Dec. 2023.

[J-23] F. Miramirkhani, T. Baykas, M. Elamassie, and M. Uysal, "IEEE 802.11bb Reference Channel Models for Light Communications", accepted for publication in *IEEE Communications Standards Magazine*, 2023.

[J-22] F. Miramirkhani, M. Karbalayghareh, E. Zeydan, and R. Mitra, "Enabling 5G Indoor Services for Residential Environment using VLC Technology", *Physical Communication*, vol. 53, pp. 101679, Aug. 2022.

[J-21] B. Donmez, R. Mitra, and F. Miramirkhani, "Channel Modeling and Characterization for VLC-based Medical Body Sensor Networks: Trends and Challenges", *IEEE Access*, vol. 9, pp. 153401-153419, Nov. 2021.

- [J-20] F. Miramirkhani, M. Karbalayghareh, and M. Uysal, "Effect of Scattering Phase Function on Underwater Visible Light Communication Channel Models", *Physical Communication*, vol. 48, pp. 101410, Oct. 2021.
- [J-19] F. Miramirkhani, M. Karbalayghareh, and R. Mitra, "Least Minimum Symbol Error Rate based Post-Distortion for Adaptive Mobile VLC Transmission with Receiver Selection", *Physical Communication*, vol. 47, pp. 101353, Aug. 2021.
- [J-18] K. R. Sekhar, F. Miramirkhani, R. Mitra, and A. C. Turlapaty, "Generic BER Analysis of VLC Channels Impaired by 3D User-Mobility and Imperfect CSI", *IEEE Communications Letters*, vol. 25, no. 7, pp. 2319-2323, Jul. 2021.
- [J-17] F. Miramirkhani, "A Path Loss Model for Link Budget Analysis of Indoor Visible Light Communications", *Electrica*, vol. 21, no. 2, pp. 1-8, May 2021.
- [J-16] R. Mitra, F. Miramirkhani, V. Bhatia, and M. Uysal, "Low Complexity Least Minimum Symbol Error Rate based Post-Distortion for Vehicular VLC", *IEEE Transactions on Vehicular Technology*, vol. 69, no. 10, pp. 11800-11810, Oct. 2020.
- [J-15] M. Karbalayghareh, F. Miramirkhani, H. B. Eldeeb, R. C. Kizilirmak, S. M. Sait, and M. Uysal, "Channel Modelling and Performance Limits of Vehicular Visible Light Communication Systems", *IEEE Transactions on Vehicular Technology*, vol. 69, no. 7, pp. 6891-6901, Jul. 2020.
- [J-14] F. Miramirkhani, and M. Uysal, "Channel Modelling for Indoor Visible Light Communications", *Philosophical Transactions of the Royal Society A, Special Issue on The Cross-Disciplinary Challenges towards Mobile Optical Wireless Networks*, vol. 378, no. 2169, pp. 1-35, Mar. 2020.
- [J-13] H. Abuella, F. Miramirkhani, S. Ekin, M. Uysal, and S. Ahmed, "ViLDAR-Visible Light Sensing Based Speed Estimation using Vehicle's Headlamps", *IEEE Transactions on Vehicular Technology*, vol. 68, no. 11, pp. 10406-10417, Nov. 2019.
- [J-12] O. Narmanlioglu, R. C. Kizilirmak, F. Miramirkhani, S. Safaraliev, S. M. Sait, and M. Uysal, "Effect of Wiring and Cabling Topologies on the Performance of Distributed MIMO OFDM VLC Systems", *IEEE Access*, vol. 7, pp. 52743-52754, Apr. 2019.
- [J-11] R. Mitra, F. Miramirkhani, V. Bhatia, and M. Uysal, "Mixture-Kernel Based Post-Distortion in RKHS for Time-Varying VLC Channels", *IEEE Transactions on Vehicular Technology*, vol. 68, no. 2, pp. 1564-1577, Feb. 2019.
- [J-10] M. Elamassie, F. Miramirkhani, and M. Uysal, "Performance Characterization of Underwater Visible Light Communication", *IEEE Transactions on Communications*, vol. 67, no. 1, pp. 543-552, Jan. 2019.
- [J-9] F. Miramirkhani, M. Uysal, O. Narmanlioglu, M. Abdallah, and K. Qaraqe, "Visible Light Channel Modeling for Gas Pipelines", *IEEE Photonics Journal*, vol. 10, no. 2, pp. 1-10, Apr. 2018.
- [J-8] F. Miramirkhani, and M. Uysal, "Visible Light Communication Channel Modeling for Underwater Environments with Blocking and Shadowing", *IEEE Access*, vol. 6, pp. 1082-1090, Feb. 2018.
- [J-7] A. Yesilkaya, E. Basar, F. Miramirkhani, E. Panayirci, M. Uysal, and H. Haas, "Optical MIMO-OFDM with Generalized LED Index Modulation", *IEEE Transactions on Communications*, vol. 65, no. 8, pp. 3429-3441, Aug. 2017.
- [J-6] O. Narmanlioglu, R. C. Kizilirmak, F. Miramirkhani, and M. Uysal, "Cooperative Visible Light Communications with Full-Duplex Relaying", *IEEE Photonics Journal*, vol. 9, no. 3, pp. 1-11, Jun. 2017.
- [J-5] F. Miramirkhani, O. Narmanlioglu, M. Uysal, and E. Panayirci, "A Mobile Channel Model for VLC and Application to Adaptive System Design", *IEEE Communications Letters*, vol. 21, no. 5, pp. 1035-1038, May 2017.
- [J-4] M. Uysal, F. Miramirkhani, O. Narmanlioglu, T. Baykas, and E. Panayirci, "IEEE 802.15.7r1 Reference Channel Models for Visible Light Communications", *IEEE Communications Magazine*, vol. 55, no. 1, pp. 212-217, Jan. 2017.
- [J-3] F. Miramirkhani, and M. Uysal, "Channel Modeling and Characterization for Visible Light Communications", *IEEE Photonics Journal*, vol. 7, no. 6, pp. 1-16, Dec. 2015. **(Listed among IEEE Photonics Journal's top 10 most frequently downloaded papers from December 2016 to November 2017).**
- [J-2] P. Moallem, F. Miramirkhani, and M. Sabahi, "Application of Elliptic Discrete Fourier Transform Type (I) in Denoising and Receiver Design", *Analog Integrated Circuits and Signal Processing*, Springer, vol. 85, no. 3, pp. 505-512, Dec. 2015.
- [J-1] A. Yesilkaya, F. Miramirkhani, H. F. Alsan, E. Basar, E. Panayirci, and M. Uysal, "Modelling of Visible Light Channels and Performance Analysis for Optical OFDM Systems" (in Turkish), *EMO Scientific Journal*, vol. 5, no. 9, pp. 19-31, Jun. 2015.

✓ Book Chapters

[BC-2] F. Miramirkhani, M. Uysal, and E. Panayirci, “Channel Modeling for Visible Light Communications”, Chapter in *Optical Wireless Communications-An Emerging Technology*, Springer, 2016.

[BC-1] O. Narmanlioglu, R. C. Kizilirmak, F. Miramirkhani, and M. Uysal, “Cooperative Visible Light Communications”, Chapter in *Optical Wireless Communications-An Emerging Technology*, Springer, 2016.

✓ IEEE 802.11bb Standard Contributions

[S-10] M. Uysal, F. Miramirkhani, T. Baykas, and K. Qaraqe, “IEEE 802.11bb Reference Channel Models for Indoor Environments”, doc.: IEEE 11-18-1582-00-00bb, Sept. 2018. [Online]. Available: <https://mentor.ieee.org/802.11/dcn/18/11-18-1582-00-00bb-ieee-802-11bb-reference-channel-models-for-indoor-environments.pdf>

[S-9] M. Uysal, F. Miramirkhani, and T. Baykas, “IEEE 802.11bb Channel Model for Conference Room Environment”, doc.: IEEE 11-18-1365-00-00bb, Jul. 2018. [Online]. Available: <https://mentor.ieee.org/802.11/dcn/18/11-18-1365-00-00bb-ieee-802-11bb-channel-model-for-conference-room-environment.docx>

Note: Channel impulse responses (CIRs) discussed in the above documents were selected as “**IEEE 802.11bb Reference Channel Models**”. These channel models allow a fair comparison of different physical layer proposals submitted to TGbb in response to the Call for Proposals. They are available for public use with instructions in: M. Uysal, F. Miramirkhani, T. Baykas, and K. Qaraqe, “CIRs of IEEE 802.11bb Reference Channel Models”, doc.: IEEE 11-18-1603-00-00bb, Sept. 2018. [Online]. Available: <https://mentor.ieee.org/802.11/dcn/18/11-18-1603-00-00bb-cirs-of-ieee-802-11bb-reference-channel-models.zip>.

[S-8] M. Uysal, F. Miramirkhani, T. Baykas, K. Qaraqe, and M. Abdallah, “IEEE 802.11bb Reference Channel Models for Gas Pipelines”, doc: IEEE 11-18-1239-01-00bb, Jul. 2018. [Online]. Available: <https://mentor.ieee.org/802.11/dcn/18/11-18-1239-01-00bb-ieee-802-11bb-reference-channel-models-for-gas-pipelines.pdf>

[S-7] M. Uysal, F. Miramirkhani, T. Baykas, K. Qaraqe, and M. Abdallah, “IEEE 802.11bb Reference Channel Models for Underwater Environments”, doc: IEEE 11-18-1238-01-00bb, Jul. 2018. [Online]. Available: <https://mentor.ieee.org/802.11/dcn/18/11-18-1238-01-00bb-ieee-802-11bb-reference-channel-models-for-underwater-environments.pdf>

[S-6] M. Uysal, F. Miramirkhani, T. Baykas, E. Kinav, and O. Rustu, “IEEE 802.11bb Reference Channel Models for Vehicular Communications”, doc: IEEE 11-18-1237-01-00bb, Jul. 2018. [Online]. Available: <https://mentor.ieee.org/802.11/dcn/18/11-18-1237-01-00bb-ieee-802-11bb-reference-channel-models-for-vehicular-communications.pdf>

[S-5] M. Uysal, F. Miramirkhani, T. Baykas, N. Serafimovski, and V. Jungnickel, “IEEE 802.11bb Reference Channel Models for Indoor Environments”, doc: IEEE 11-18-1236-01-00bb, Jul. 2018. [Online]. Available: <https://mentor.ieee.org/802.11/dcn/18/11-18-1236-01-00bb-ieee-802-11bb-reference-channel-models-for-indoor-environments.pdf>

✓ IEEE 802.15.7r1 (802.15.13) Standard Contributions

[S-4] M. Uysal, T. Baykas, F. Miramirkhani, N. Serafimovski, and V. Jungnickel, “TG7r1 Channel Model Document for High-Rate PD Communications”, doc: IEEE 802.15-15/0746r1, Sept. 2015. [Online]. Available: <https://mentor.ieee.org/802.15/dcn/15/15-15-0746-01-007a-tg7r1-channel-model-document-for-high-rate-pd-communications.pdf>

Note: Channel impulse responses (CIRs) discussed in the above document were selected as “**IEEE 802.15.7r1 Reference Channel Models**”. These channel models allow a fair comparison of different physical layer proposals submitted to TG7r1 in response to the Call for Proposals. They are available for public use with instructions in: M. Uysal, F. Miramirkhani, T. Baykas, N. Serafimovski, and V. Jungnickel, “TG7r1 CIRs Channel Model Document for High-Rate PD Communications”, doc: IEEE 802.15-15/0747r0, Sept. 2015. [Online]. Available: <https://mentor.ieee.org/802.15/dcn/15/15-15-0747-00-007a-tg7r1-cirs-channel-model-document-for-high-rate-pd-communications.zip>.

Further information on channel modeling method can be found in the following documents:

[S-3] M. Uysal, F. Miramirkhani, T. Baykas, N. Serafimovski, and V. Jungnickel, “LiFi Channel Models: Office, Home and Manufacturing Cell”, doc: IEEE 802.15-15/0685r0, Sept. 2015. [Online]. Available: <https://mentor.ieee.org/802.15/dcn/15/15-15-0685-00-007a-lifi-reference-channel-models-office-home-manufacturing-cell.pdf>

[S-2] M. Uysal, and F. Miramirkhani, “LiFi Reference Channel Models: Office, Home, and Hospital”, doc:

IEEE 802.15-15/0514r1, Jul. 2015. [Online]. Available: <https://mentor.ieee.org/802.15/dcn/15/15-15-0514-01-007a-lifi-reference-channel-models-office-home-hospital.pptx>
[S-1] M. Uysal, and F. Miramirkhani, "Channel Modeling for Visible Light Communications", doc: IEEE 802.15-15/0352r1, May 2015. [Online]. Available: <https://mentor.ieee.org/802.15/dcn/15/15-15-0352-01-007a-channel-modeling-for-visible-light-communications.pptx>

✓ International Conference Papers

- [IC-22]** L. Kouhalvandi, S. Aygun, L. Matekovits, and F. Miramirkhani, "Optimizing Indoor Localization Accuracy with Neural Network Performance Metrics and Software-Defined IEEE 802.11az Wi-Fi Set-Up", *10th International Conference on Wireless Networks and Mobile Communications (WINCOM 2023)*, Istanbul, Turkey, Oct. 2023.
- [IC-21]** B. Donmez, and F. Miramirkhani, "Path Loss and RMS Delay Spread Model for VLC-based Patient Health Monitoring System", *4th West Asian Symposium on Optical and Millimeter-wave Wireless Communications (WASOWC)*, Tabriz, Iran (held as a virtual conference due to COVID-19), May 2022.
- [IC-20]** B. Donmez, and F. Miramirkhani, "Channel Modeling and Characterization for VLC-based MBSNs Impaired by 3D User Mobility", *13th International Conference on Electrical and Electronics Engineering (ELECO 2021)*, Bursa, Turkey (held as a Virtual Conference due to COVID-19), Nov. 2021.
- [IC-19]** A. Zeshan, M. Karbalayghareh, F. Miramirkhani, M. Uysal, and T. Baykas, "Comparative Performance Evaluation of VLC, LTE and WLAN Technologies in Indoor Environments", *IEEE International Black Sea Conference on Communications and Networking (BlackSeaCom 2021)*, Bucharest, Romania (held as a Virtual Conference due to COVID-19), May 2021.
- [IC-18]** H. B. Eldeeb, F. Miramirkhani, and M. Uysal, "A Path Loss Model for Vehicle-to-Vehicle Visible Light Communications", *IEEE 15th International Conference on Telecommunications (ConTEL 2019)*, Graz, Austria, Jul. 2019.
- [IC-17]** M. Elamassie, M. Karbalayghareh, F. Miramirkhani, M. Uysal, M. Abdallah, and K. Qaraqe, "Resource Allocation for Downlink OFDMA in Underwater Visible Light Communications", *IEEE International Black Sea Conference on Communications and Networking (BlackSeaCom 2019)*, Sochi, Russia, Jun. 2019.
- [IC-16]** I. Marin-Garcia, F. Miramirkhani, M. Uysal, and R. Perez-Jimenez, "Performance Evaluation of Vehicle-to-Vehicle Visible Light Communications in the Presence of Denial of Service Attacks", *Global LiFi Congress*, Paris, France, Jun. 2019.
- [IC-15]** M. Elamassie, M. Karbalayghareh, F. Miramirkhani, and M. Uysal, "Adaptive DCO-OFDM for Underwater Visible Light Communications", *IEEE 27th Signal Processing, Communication and Applications Conference (SIU)*, Sivas, Turkey, May 2019.
- [IC-14]** M. Karbalayghareh, F. Miramirkhani, M. Safari, and M. Uysal, "Vehicular Visible Light Communications with SPAD Receivers", *IEEE Wireless Communications and Networking Conference (WCNC'19)*, Marrakech, Morocco, Apr. 2019.
- [IC-13]** H. Abuella, S. Ekin, S. Ahmed, F. Miramirkhani, B. Kebapci, and M. Uysal, "Wireless Sensing using Vehicle Headlamps for Intelligent Transportation Systems: Proof of Concept", *Transportation Consortium of South Central States (Tran-SET) Conference*, San Antonio, TX, USA, Apr. 2019.
- [IC-12]** M. Elamassie, M. Karbalayghareh, F. Miramirkhani, R. C. Kizilirmak, and M. Uysal, "Effect of Fog and Rain on the Performance of Vehicular Visible Light Communications", *IEEE 87th Vehicular Technology Conference (VTC2018-Spring)*, Porto, Portugal, Jun. 2018.
- [IC-11]** M. Elamassie, F. Miramirkhani, and M. Uysal, "Channel Modeling and Performance Characterization of Underwater Visible Light Communications", *IEEE 4th Workshop on Optical Wireless Communications* (co-located with IEEE ICC'18), Kansas City, MO, USA, May 2018.
- [IC-10]** S. Safaraliev, F. Miramirkhani, and M. Uysal, "Effect of LED Wiring and Cabling Topologies on Visible Light Communication Channels", *10th International Conference on Electrical and Electronics Engineering (ELECO 2017)*, Bursa, Turkey, Nov. 2017.
- [IC-9]** O. Narmanlioglu, R. C. Kizilirmak, F. Miramirkhani, and M. Uysal, "Rate-Adaptive OFDM MIMO VLC System", *10th International Conference on Electrical and Electronics Engineering (ELECO 2017)*, Bursa, Turkey, Nov. 2017.
- [IP-8]** F. Miramirkhani, and M. Uysal, "Channel Modeling and Characterization for Visible Light Communications", *Communications Technologies and Applications Workshop*, Istanbul, Turkey, Aug. 2017.
- [IC-7]** B. Kebapci, F. Miramirkhani, H. Nouri, and M. Uysal, "A Custom-Design Atmospheric Channel Emulator for the Performance Evaluation of Free Space Optical Communication Systems", **Invited Paper**, *19th International Conference on Transparent Optical Networks (ICTON)*, Girona, Spain, Jul. 2017.

- [IC-6] M. S. Demir, F. Miramirkhani, and M. Uysal, "Handover in VLC Networks with Coordinated Multipoint Transmission", *IEEE International Black Sea Conference on Communications and Networking (BlackSeaCom 2017)*, Istanbul, Turkey, Jun. 2017.
- [IC-5] A. Yesilkaya, F. Miramirkhani, E. Basar, E. Panayirci, and M. Uysal, "Performance of MIMO Enhanced Unipolar OFDM with Realistic Indoor Visible Light Channel Models", *IEEE Workshop on Optical Wireless Communication* (co-located with the IEEE WCNC'16), Doha, Qatar, Apr. 2016.
- [IC-4] V. Jungnickel, M. Uysal, N. Serafimovski, T. Baykas, D. O'Brien, E. Ciaramella, Z. Ghassemlooy, R. J. Green, H. Haas, P. A. Haigh, V. Jimenez, F. Miramirkhani, M. Wolf, and S. Zvanovec, "A European View on the Next Generation Optical Wireless Communication Standard", *IEEE Conference on Standards for Communications and Networking (CSCN)*, Tokyo, Japan, Oct. 2015.
- [IC-3] A. Yesilkaya, H. F. Alsan, F. Miramirkhani, E. Panayirci, H. Senol, and M. Uysal, "Performance Analysis of DCO-OFDM Systems in the Presence of Realistic Indoor Visible Light Channels", *European Conference on Networks and Communications (EuCNC)*, Jun. 2015.
- [IC-2] A. Yesilkaya, H. Alsan, F. Miramirkhani, E. Panayirci, H. Senol, and M. Uysal, "Modeling of Visible Light Channels and Performance Analysis of ACO-OFDM" (in Turkish), *IEEE 23rd Signal Processing, Communication and Applications Conference (SIU)*, Malatya, Turkey, May 2015.
- [IC-1] F. Miramirkhani, M. Uysal, and E. Panayirci, "Novel Channel Models for Visible Light Communications", **Invited Paper**, *SPIE Photonics West*, San Francisco, California, United States, Feb. 2015.

Professional Activities

✓ Editorial Positions

- Review Editor, Wireless Communications for Frontiers in Communications and Networks

✓ Executive Positions in Conferences

- Technical Program Committee Member, IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC 2023), Toronto, ON, Canada, Sept. 2023
- Technical Program Committee Member, IEEE Workshop on Optical Wireless Technology for Enhanced Connectivity in 6G (co-located with IEEE PIMRC 2021), Helsinki, Finland, Sept. 2021
- Technical Program Committee Member, 17th International Conference on Wireless and Mobile Communications (ICWMC 2021), Nice, France, July 2021
- Technical Program Committee Member, IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC 2021), Helsinki, Finland, Sept. 2021
- Technical Program Committee Member, International Conference on Laser, Optics and Optoelectronic Technology (LOPET 2021), Xi'an, China, May 2021
- Technical Program Committee Member, 11th International Conference on Mobile Services, Resources, and Users (MOBILITY 2021), Valencia, Spain, May 2021
- Technical Program Committee Member, IEEE 93rd Vehicular Technology Conference (VTC2021-Spring), Helsinki, Finland, Apr. 2021
- Technical Program Committee Member, IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC 2020), London, UK, Sept. 2020
- Technical Program Committee Member, IEEE Middle East & North Africa COMMunications (MENACOMM 2019) Conference, Manama, Bahrain, Nov. 2019
- Technical Program Committee Member, International Conference on Innovation and Intelligence for Informatics, Computing, and Technologies (3ICT 2019), University of Bahrain, Bahrain, Sept. 2019
- Technical Program Committee Member, IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC 2019), Istanbul, Turkey, Sept. 2019
- Technical Program Committee Member, International Conference on Electrical Engineering (ELE 2018), Dubai, UAE, Feb. 2018

✓ Reviewer Services

- IEEE Communications Magazine
- IEEE Vehicular Technology Magazine
- IEEE Transactions on Communications
- IEEE Transactions on Wireless Communications
- IEEE Transactions on Signal Processing
- IEEE Transactions on Vehicular Technology
- IEEE/OSA Journal of Lightwave Technology
- Journal of the Optical Society of America A

- IEEE Photonics Journal
- IEEE Access
- IEEE Open Journal of the Communications Society
- IEEE Communications Letters
- IEEE Wireless Communications Letters
- IEEE Photonics Technology Letters
- Chinese Optics Letters
- IET Optoelectronics
- IET Communications
- The Journal of Engineering (IET)
- Physical Communication (Elsevier)
- International Journal of Electronics and Communications (Elsevier)
- International Journal of Communication Systems (Wiley)
- Optical and Quantum Electronics (Springer)
- Journal of Optical Communications
- Infocommunications Journal
- International Journal of Sensors, Wireless Communications and Control
- Advances in Science, Technology and Engineering Systems Journal
- Turkish Journal of Electrical Engineering and Computer Sciences

✓ **Memberships**

- Institute of Electrical & Electronics Engineers (IEEE): Senior Member
- The Optical Society of America (OSA): Member
- The International Society for Optics and Photonics (SPIE): Early Career Professional

Contributed Projects

✓ **Principle Investigator**

- Scientific Research Projects (BAP): Channel Modelling and Characterization for VLC-based Medical Body Sensor Networks (Jun. 2019-Jan. 2022)

✓ **Researcher**

- Turkish Airline (THY) – Aselsan: Optical based Wireless Communication (LiFi) Development of in-Flight Entertainment (IFE) Systems for Civil Aircraft (Apr. 2019-Jun. 2020)
- Nazarbayev University: Physical Layer Design for the Advancement of VLC Based Intelligent Transportation Systems (Apr. 2017-Dec. 2017)
- The Scientific & Technological Research Council of Turkey (TUBITAK) 1003: Innovative Optical Wireless Communication Technologies for 5G and Beyond (Apr. 2016-Apr. 2019)
- The Scientific & Technological Research Council of Turkey (TUBITAK) 1001: Visible Light Communication Techniques for Future Generation of Underwater Networks (Mar. 2016-Mar. 2019)
- The Scientific & Technological Research Council of Turkey (TUBITAK), COST 2515-113E307: MIMO-OFDM Based Visible Light Communications (Feb. 2014-Nov. 2016)

Developed Code/Simulator

- ✓ M. Elamassie, M. Uysal, F. Miramirkhani, T. Baykas, and K. Qaraqe, “IEEE 802.11bb Reference Channel Models”, Dec. 2018. <https://www.mathworks.com/matlabcentral/fileexchange/69553-ieee-802-11bb-reference-channel-models>
- This MATLAB Toolbox generates visible light communication (VLC) channel impulse responses based on the document: M. Uysal, F. Miramirkhani, T. Baykas, and K. Qaraqe, “IEEE 802.11bb Reference Channel Models for Indoor Environments”, IEEE 802.11-18/1582r4, Nov. 2018.

Teaching

- ✓ EE582 - Special Topics: Statistical Signal Processing (Spring 2019-2020/Spring 2022-2023)
- ✓ EE572 - Wireless Communications (Fall 2019-2020/Fall 2020-2021/Fall 2022-2023/Fall 2023-2024)
- ✓ EE501 - Probability and Stochastic Processes (Spring 2018-2019)
- ✓ EE500 - Graduate Seminar (Spring 2020-2021)

- ✓ ELEC4704 - Communication Simulation Techniques and Laboratory (Spring 2019-2020/Fall 2021-2022/Fall 2022-2023)
 - ✓ ELEC4702 - Digital Communication Systems (Fall 2019-2020/Fall 2020-2021)
 - ✓ ELEC3701 - Introduction to Communication Systems (Fall 2021-2022/Spring 2021-2022/Fall 2022-2023)
 - ✓ ELEC3502 - Simulation Tools (Fall 2019-2020/Fall 2020-2021/Fall 2021-2022/Spring 2021-2022/Spring 2022-2023/Fall 2023-2024)
 - ✓ ELEC2501 - Signals and Systems (Summer 2018-2019/Summer 2019-2020)
 - ✓ ELEC2205 - Electrical Circuits (Fall 2019-2020/Spring 2022-2023/Fall 2023-2024)
 - ✓ ELEC2204 - Electrical Circuits Laboratory (Spring 2020-2021/Spring 2021-2022/Spring 2022-2023)
 - ✓ ELEC2201 - Circuit Theory I (Summer 2019-2020)
 - ✓ COMP1101 - Introduction to Programming in MATLAB (Spring 2019-2020/Spring 2020-2021)
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Honors & Awards

- ✓ “IEEE Working Group Award” by the leadership of IEEE 802.11bb-2023 for my contributions to this important standard, Oct. 2023
 - ✓ Elevation to the grade of IEEE Senior Member, June 2023
 - ✓ 2020 Board of Trustees Outstanding Scientific Achievement Award in the Faculty of Engineering, Isik University, Istanbul, Turkey, June 2021
 - ✓ 2019 Board of Trustees Outstanding Scientific Achievement Award in the Faculty of Engineering, Isik University, Istanbul, Turkey, June 2021
 - ✓ The 2019 IEEE Turkey Ph.D. Thesis Award with the PhD thesis title “Channel Modeling and Characterization for Visible Light Communications: Indoor, Vehicular, and Underwater Channels” under the supervision of Prof. Murat Uysal.
 - ✓ The 2019 Ord. Prof. Bedri Karafakioglu Research Incentive Award in recognition of my contributions to the Visible Light Communication Channel Modelling.
 - ✓ Best Paper Award to the paper “Resource Allocation for Downlink OFDMA in Underwater Visible Light Communications” authored by M. Elamassie, M. Karbalayghareh, F. Miramirkhani, M. Uysal, M. Abdallah, and K. Qaraqe, IEEE International Black Sea Conference on Communications and Networking (BlackSeaCom 2019), Jun. 2019
 - ✓ IEEE Standard Reference Channel Models, Dec. 2018: The LiFi channels developed by Dr. Miramirkhani were selected as the “LiFi Reference Channel Models” by the IEEE 802.15.13 and IEEE 802.11bb Task Groups. All companies and research institutions are required to use these channel models as reference for their performance assessments and comparative analysis in the standardization proposals they will submit over the coming months.
 - ✓ Best Research Assistant Award of the Graduate School of Engineering, Ozyegin University, Aug. 2018
 - ✓ Outstanding Contribution in Reviewing, Physical Communication (Elsevier), May 2018
 - ✓ Third Prize of 1000 TL in Best Poster Award, Communications Technologies and Applications Workshop, Istanbul, Turkey, Aug. 2017
 - ✓ Top 10% Student in Department of Electrical & Electronics Engineering at University of Isfahan, Isfahan, Iran, Sept. 2011
-

Computer Skills

- ✓ Zemax®
- ✓ MATLAB®
- ✓ Latex
- ✓ Office (Word, Excel, Power Point)