

# Mustafa Özmen

[mustafa.ozmen89@gmail.com](mailto:mustafa.ozmen89@gmail.com)

## DENEYİM

### **Brown University**

Doktora Sonrası Araştırma Görevlisi

**Aselsan A.Ş.**

Stajyer Mühendis

**Providence, RI, ABD**

(Ekim 2017 – Aralık 2019)

**Ankara, Türkiye**

(Haziran 2010 – Temmuz 2010)

## EĞİTİM

### **Syracuse University**

Ph.D. in Electrical Engineering & Computer Science

**Syracuse, NY, ABD**

(Ağustos 2017)

### **Bilkent University**

B.S., Electrical Engineering

**Ankara, Türkiye**

(Mayıs 2011)

## PROFESYONEL İLGİLER

Kablosuz Haberleşme, Bilgi Teorisi, Enerji Verimliliği, Moleküler Haberleşme, MIMO, OFDM, QoS (port önceliği) Altında Haberleşme, Sinyal İşleme, Makine Öğrenimi (ML), Bilgi Teorisi Güvenliği.

## BİLİMSEL KATKILAR

[Google scholar](#), Atıf Sayısı: >220, Citations per year: >30, h-index: 7

## PROFESYONEL ÇALIŞMALAR

### **Moleküler Bilişim (DARPA Projeleri)**

- Moleküler haberleşmede kanal modelleme
- Moleküler haberleşmede rekor veri hızı [Link](#)
- Küçük molekül karışımları ile veri depolama sisteminde hata düzelten kod tasarımı
- Kimyasal karışımların kütle spektrumunun modellenmesi

### **Bilgi Teorisi ve Kablosuz Haberleşme**

- QoS altında yeni bir veri hızı formülasyonu [Link](#)
- Enerji verimliliği hesaplamaları (bit başına enerji ve geniş bant eğimi)
- QoS altında ve rastgele veri gelişlerinde sönümlü kanallarda güç adaptasyon politikaları [Link](#)
- Markovian rastgele veri gelişlerinde enerji verimliliği ve veri hızı dengelemesi analizi
- Çoklu Kanallara tüm çalışmaları geliştirme

### **Fiziksel Katman Güvenliği**

- Gizlice dinlenen kanallarda (mükemmel ve kısıtlı kanal bilgisi altında) enerji verimliliği hesaplamaları [Link](#)

## TEKNİK YETENEKLER

- **Bilgisayar Dilleri:** MATLAB, Python, JAVA, C, VHDL, LaTeX
- **Uygulamalar:** MATLAB, Spyder, Xilinx ISE, WinEdt, Arduino
- **Dil:** Turkish (native), English (advanced), Japanese (beginner)

## REFERANSLAR

- **Christopher Rose**, Professor at Brown University, Providence, RI  
[Christopher\\_Rose@brown.edu](mailto:Christopher_Rose@brown.edu)
- **Cenk Gursoy**, Professor at Syracuse University, Syracuse, NY  
[mcgursoy@syr.edu](mailto:mcgursoy@syr.edu) (315) 443-4403
- **Jacob Rosenstein**, Assistant Professor at Brown University, Providence, RI  
[Jacob\\_Rosenstein@brown.edu](mailto:Jacob_Rosenstein@brown.edu)
- **Pramod K. Varshney**, Distinguished Professor at Syracuse University, Syracuse, NY  
[varshney@syr.edu](mailto:varshney@syr.edu) (315) 443-1060

# Mustafa Özmen

[mustafa.ozmen89@gmail.com](mailto:mustafa.ozmen89@gmail.com) •

## ESERLER

### *Doktora tezi (Awarded All-University Doctoral Prize)*

Ozmen, Mustafa, "Wireless Throughput and Energy Efficiency under QoS Constraints" (2017). Dissertations - ALL. 763.

### *Uluslararası hakemli dergilerde yayımlanan makaleler*

- [J0] Chris Arcadia et al. Multicomponent molecular memory. **Nature Communications**. 11 (691) Feb. 2020
- [J1] **M. Ozmen**, E. Kennedy, J. Rose, P. Shakya, J. K. Rosenstein, C. Rose, " High Speed Chemical Vapor Communication Using Photoionization Detectors in Turbulent Flow," IEEE Trans. On **Molecular, Biological and Multi-Scale Communications**, vol. 4, no. 3, 160-170, Sept. 2018
- [J2] C. Rose, I. S. Mian, **M. Ozmen**, "Capacity Bounds on Point-to-Point Communication Using Molecules," Proc. of IEEE , vol. 107, no. 7, July 2019.
- [J3] Y. Hu, **M. Ozmen** and M. C. Gursoy, A. Schmeink, " Optimal Power Allocation for QoS-Constrained Downlink Multi-User Networks in the Finite Blocklength Regime," IEEE Transactions on **Wireless Communications**, vol. 17, no. 9, 5827-5840, Sept. 2018.
- [J4] **M. Ozmen** and M. C. Gursoy, "Secure Transmission of Delay-Sensitive Data over Wireless Fading Channels," IEEE Transactions on **Information Forensics and Security**, vol. 12, no. 9, pp. 2036-2051, Sept. 2017.
- [J5] G. Ozcan, **M. Ozmen** and M. C. Gursoy, "QoS Driven Energy Efficient Power Control with Random Arrivals and Arbitrary Input Distributions," IEEE Transactions on **Wireless Communications**, vol. 16, no. 1, pp. 376-388, Jan. 2017.
- [J6] **M. Ozmen** and M. C. Gursoy, "Energy-efficient power control in fading channels with Markovian sources and QoS constraints," IEEE Transactions on **Communications**, vol. 64, no. 12, pp. 5349-5364, Dec. 2016.
- [J7] **M. Ozmen** and M. C. Gursoy, "Wireless Throughput and Energy Efficiency with Random Arrivals and Statistical Queueing Constraints," IEEE Transactions on **Information Theory**, vol. 62, no. 3, pp. 1375-1395, Mar. 2016.
- [J8] **M. Ozmen** and M. C. Gursoy, "Energy Efficiency of Fixed-Rate Transmissions with Markov Arrivals under Queueing Constraints," IEEE **Communications Letters**, vol. 18, no. 4, pp. 608-611, Apr. 2014.
- [J9] **M. Ozmen** and M. C. Gursoy, "Throughput Regions of Multiple-Access Fading Channels with Markov Arrivals and QoS Constraints," IEEE **Wireless Communications Letters**, vol. 2, no. 5, pp. 499-502, Oct. 2013.

### *Uluslararası bilimsel toplantılarda sunulan ve bildiri kitaplarında basılan bildiriler*

- [C1] **M. Ozmen**, E. Kennedy, J. Rose, P. Shakya, J. K. Rosenstein, C. Rose, " High Speed Chemical Vapor Communication Using Photoionization Detectors," Proc. of the 2018 IEEE Global Communications Conference (Globecom), Abu Dhabi, UAE, Dec. 2018.
- [C2] **M. Ozmen** and M. C. Gursoy, "Energy-delay-secrecy tradeoffs in wireless communications under channel uncertainty," Proc. of the 2016 IEEE Communications and Networking Conference (WCNC), Barcelona, Spain, April 2018.
- [C3] Y. Hu, **M. Ozmen** and M. C. Gursoy, A. Schmeink, "Optimal power allocation for QoS-constrained downlink networks with finite blocklength codes," Proc. of the 2016 IEEE Communications and Networking Conference (WCNC), Barcelona, Spain, April 2018.
- [C4] G. Ozcan, **M. Ozmen** and M. C. Gursoy, "QoS-Driven Energy-Efficient Power Control with Markov Arrivals and Finite-Alphabet Inputs," Proc. of the 2016 IEEE International Symposium on Information Theory (ISIT), Barcelona, Spain, July 2016.
- [C5] D. Qiao, **M. Ozmen** and M. C. Gursoy, "QoS-driven power control in fading multiple-access channels with random arrivals," Proc. of the 2016 IEEE International Conference on Communications (ICC), Kuala Lumpur, Malaysia, May 2016.
- [C6] **M. Ozmen** and M. C. Gursoy, "Energy Efficiency in Multiple-Antenna Channels with Markov Arrivals and Queueing Constraints," Proc. of the 2015 IEEE International Symposium on Information Theory (ISIT), Hong Kong, June 2015.
- [C7] **M. Ozmen** and M. C. Gursoy, "Power Control in Fading Broadcast Channels with Random Arrivals and QoS Constraints," Proc. of the 2014 IEEE Global Communications Conference (Globecom), Austin, TX, Dec. 2014.
- [C8] **M. Ozmen**, C. Ye, M. C. Gursoy, and S. Velipasalar, "Energy efficiency in secure fading relay channels QoS constraints," Proc. of the IEEE 25th Annual International Symposium on Personal, Indoor, and Mobile Radio Communications (PIMRC), Sep. 2014.
- [C9] **M. Ozmen** and M. C. Gursoy, "Energy-Efficient Power Control Policies in Fading Channels with Markov Arrivals and QoS Constraints," Proc. of the IEEE Global Conference on Signal and Information Processing (GlobalSIP), Austin, TX, Dec. 2013 (invited paper).
- [C10] **M. Ozmen**, G. Ozcan, and M. C. Gursoy, "Energy Efficiency in Cognitive Radio Channels with Markov Arrivals," Proc. of the First International Black Sea Conference on Communications and Networking, Batumi, Georgia, July 2013 (invited paper).
- [C11] **M. Ozmen** and M. C. Gursoy, "Throughput and Energy Efficiency under Queueing and Secrecy Constraints," Proc. of the Asilomar Conference on Signals, Systems and Computers, Nov. 2012 (invited paper).
- [C11] **M. Ozmen**, M. C. Gursoy, and P. Varshney, "Energy Efficiency in Fading Interference Channels under QoS Constraints," Proc. of the 2012 International Symposium on Information Theory and its Applications (ISITA), Honolulu, HI, Oct. 2012.
- [C13] **M. Ozmen** and M. C. Gursoy, "Impact of Channel and Source Variations on the Energy Efficiency under QoS Constraints," Proc. of the 2012 IEEE International Symposium on Information Theory (ISIT), Boston, MA, July 2012.