

# Recent Advances in Signal Processing Technologies for Wireless and Optical Communications

Young-Kai (Y. K.) Chen  
Deputy CTO, Coherent Corp., United States  
young-kai.chen@coherent.com



## ABSTRACT

Over the past decades, significant advance in signal processing technologies has multiplied the data traffic capacity by more than 10,000 times higher for both wireless and optical communications. To accurately and reliably deliver the high speed data stream, advanced signal modulation and processing techniques are developed to transmit and receive complex signals over a limited channel bandwidth, while mitigating and even exploiting the impairments from complex and ever contested environment.

To meet these needs, new signal processing algorithms, such as MIMO and error correction, as well as powerful digital and mixed-mode integrated circuit technologies are developed. In this talk, we will survey recent advances in the signal processing technology and mixed-signal integrated circuit technology, as well as the new capabilities enabled by the emerging AI and machine learning technologies.