

Free Space Optical Wireless Communications: *Fundamentals and Potential Applications with a vision for 5G and Beyond*

All-Day Course Agenda: (Times/topics covered subject to change. Intended as general reference)

9:30	Introduction of Speaker/OSA Career Lab
9:35	Demand for High Speed Communications: Internet, Video, Imaging, Mobile Applications
	Introduction to OWC: Wired vs Wireless, (FSO) vs (RF) wireless communications
	Optical Wireless Communication Theory: Optical Propagation through Atmospheric Channel. OWC System. Link Analysis.
	Atmospheric Effects and Mitigation Techniques: Improve Atmospheric OWC Performance
	Optical Wireless Communications Systems: Optical Wireless Transceiver Design
	Modulation, Detection, and Coding Techniques for OWC. Digital Communication System: (OFDM), Detection methods, Channel Capacity and Coding.
10:30	BREAK 10:30-10:40
10:40	Atmospheric Effects and Mitigation Techniques: Improve Atmospheric OWC Performance
	OWC System Performance. FSO Wireless Access Networks, Metro, Access Network Technologies. Link Availability, Reliability and Margin. OWC Link Performance Bit-Error-Rate (BER), Link Analysis. Examples (Indoor, Terrestrial, Airborne and Satellite Platforms): Short-Range and Long-Range Links, Slant Communication Channel Path.
	Detection methods: Channel Capacity and Coding
12:00	LUNCH BREAK 12:00-12:40
12:40	OWC System Performance cont.:
	Non-Line-of-Sight (NLOS), Ultraviolet and Indoor OWC.
	Visible Light-based (VLC) Optical Wireless Communications: VLC and LiFi, Channel Modeling. VLC links.
	OWC for Global Internet Connectivity: OWC for Satellites
	Underwater Optical Wireless Communications: Satellite-to-Underwater Optical communication.
14:40	BREAK 14:40-15:00
15:00	5G Special Current Topic: 5G Mobile and Optical Wireless Communications Technology
	Conclusions and Next Future Trend in OWC, Potential Directions and the Possibilities

16:00	PROGRAM END. Q&A BEGINS
16:30	END OF Q&A