

Theme: Design of Precoding and Artificial Noise in Visible Light Communications

Purpose:

- (1) Optimal precoding designs to support multiple users in visible light communication (VLC) systems.
- (2) Optimal artificial noise designs to maximize the performance of physical layer security in VLC systems.

Achievement:

- (1) Design optimal zero-forcing (ZF) precoding techniques to maximize users' fairness and users' sum-rate.
- (2) Design coordinated/cooperative ZF precoding technique to improve users' sum-rate in a multi-cell VLC system.
- (3) Design optimal artificial noise schemes to (i) maximize the physical layer security performance and (ii) minimize the total transmitted power