



# ***SEMINAR ANNOUNCEMENT***

**“Photon measurement: theoretical background and overview of application  
”**

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In this talk, I intend to incite conversation on the ramification of the theoretical analysis of the process of quantum photon measurement. Particularly, I plan to start with issues pertaining to the understanding of quantum measurement theories such as the standard approach, von Neuman measurement and positive operator valued measure; and then, extend the discussion to the corresponding applications in the area of quantum optics. By and large, I will focus on the mathematical formulation that can be derived from available simple physical models. Specifically, starting with the technique of wave mixing (both active and passive), I will attempt to establish the mechanisms of photon detection that include direct and homodyne photon detections. As illustration, I will touch upon the idea of optical coherence and its practical implications. To galvanize the presented discussion, I will provide some published results, and also highlight the pertinent active research orientations.