**Computer Vision Based Systems for Human Pupillary Behaviour Evaluation: A systematic review of the literature**

* Analyzing pupillary behavior is crucial for assessing neurological activity.
* Examining pupil behavior is a simple, low-cost method that can be used as a complementary diagnosis. This approach is made be recording the pupillary behavior against light stimuli and measuring the pupil diameter through the video.
* Pupil diameter based on the intensity of illumination in the eye.
* Pupillometry has a dependency on devices with ifrarred cameras. Such devices, combined with computer vision software are responsible for the image acquisition, processing and feature extraction, essential steps for pupillary behavior evaluation.
* Pupillometry systems can provide an efficient solution by extracting reliable data for medical evaluations.
* Q01. What are the specifications of devices used for image acquisition? And what are the types of environment where images are taken?
* Q02. What are the methods applied for pupil segmentation?
* Q03. What are the procedures used to induce pupillary behavior?
* Q04. What are the methods used to interpolate the blinking gaps?
* Q05. What are the features extracted for pupillary behavior evaluation?
* Q06. What are the levels of accuracy from the proposed systems?

**Eye Safety for Proximity Sensing using Infrared Light-emitting Diodes**

* All consumer products that emit light radiation – whether visible, ultraviolet, or infrared - must adhere to international standards that specify exposure limits for human eye safety.
* This Application Note serves as a guide for the product designer to Human Eye Safety when using Infrared light-emitting diodes in consumer products.
* Photobiological effects of exposure to near-infrared radiation are reviewed first, followed by brief explanations of the relevant sections of the IEC-62471 Standard document. Next, the Intersil Eye Safety Calculator is described.
* Infrared, visible or ultraviolet electromagnetic radiation, in sufficient concentrations, can cause damage to the human eye.
* With increases in LED efficiency and power, especially with application for Proximity sensing, which provides more chance for direct contact with the eye, it is critical to understand the effects of this type of exposure.
* The human eye can withstand only a finite amount of optical radiation, beyond which it can be irreversibly damaged.
* While human eye damage is much more acute from Ultraviolet (UV) and short-wavelength Blue-light exposure, excessive exposure to Near-Infrared (NIR, ~700nm to 1400nm wavelength) can cause damage to the cornea and the retina. Most Near-IR LEDs used in consumer products produce very low levels of NIR radiation and pose no threat to the human eye. However, under specific conditions and operational modes these components may produce sufficient NIR radiation to exceed IEC exposure limits.
* The most common Bioeffects caused by excessive NIR exposure are Infrared Cataract (also known as "industrial heat cataract," "furnaceman's cataract," or "glassblower's cataract") and Retinal Thermal Injury.