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Honghua Tan
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Introduction

The 2013 3rd International Conference on Photonics and Image in Agriculture Engineering (PIAGENG 2013) was held 27–28 January 2013, in Sanya, China.

PIAGENG 2013 is the most comprehensive conference focused on the various aspects of advances in photonics and Image in agriculture engineering. The goal of this conference is to bring together the researchers from academia and industry, as well as practitioners to share ideas, problems, and solutions relating to the multifaceted aspects of photonics and Image in agriculture engineering.

Agriculture, also called farming or husbandry, is the cultivation of animals, plants, fungi, and other life forms for food, fiber, biofuel, and other products used to sustain life. Agriculture was the key development in the rise of sedentary human civilization, whereby farming of domesticated species created food surpluses that nurtured the development of civilization. The study of agriculture is known as agricultural science.

The science of photonics includes the generation, emission, transmission, modulation, signal processing, switching, amplification, and detection/sensing of light. The term photonics thereby emphasizes that photons are neither particles nor waves—they are different in that they have both particle and wave nature. It covers all technical applications of light over the whole spectrum from ultraviolet over the visible to the near-, mid- and far-infrared. Most applications, however, are in the range of the visible and near infrared light. The term photonics developed as an outgrowth of the first practical semiconductor light emitters invented in the early 1960s and optical fibers developed in the 1970s.

Applications of photonics are ubiquitous. Included are all areas from everyday life to the most advanced science, e.g., light detection, telecommunications, information processing, lighting, metrology, spectroscopy, holography, medicine (surgery, vision correction, endoscopy, health monitoring), military technology, laser material processing, visual art, biophotonics, agriculture, and robotics.

An image is an artifact that depicts or records visual perception, for example, a two-dimensional picture, that has a similar appearance to some subject—usually a physical object or a person, thus providing a depiction of it.

The success of this truly international conference is attributed to the efforts of the organizing committee. We also want to thank all the invited speakers, oral and poster presenters, reviewers of manuscripts, and participants of the conference who have contributed to the success of this international conference.

Honghua Tan