

## Ten days training on “Sensors and protocols for Machine Vision Applications in Agriculture” concluded

NAIP sponsored 10-day training on “Sensors and protocols for Machine Vision Applications in Agriculture” was completed on Dec. 24, 2011. The training course was attended by 12 participants from different parts of India viz. Tripura, Gujarat, Punjab, Karnataka, Tamil Nadu, Uttar Pradesh and Madhya Pradesh. All the participants were from Agricultural Engineering background, except one who was having background of fisheries. The participants were exposed to use of various hardware and software for machine vision applications in agriculture. International faculty Dr. Jeyamkondan Subbiah, Associate Professor, University of Nebraska, Lincoln, USA was present during Dec. 18-22, 2011. He discussed about various sophisticated and new techniques used for quality detection of agricultural produce. The course was conducted in such a manner that the participants spent most of their time doing practicals. Some of the exercises included in the training course were:

- Making of a vision sensor – participants created a sensor system by bread boarding a circuit using IR LED and photo diode
- Collection of spectral signatures of plant materials using spectro radio meter
  - Analysis of spectral data using kemometric protocols
- Image processing programming for detection of physical and optical quality of agricultural produce
- Use of smart vision devices
- Imaging for non-destructive internal quality evaluation
- Use of computer hardware for digital data acquisition and control.
- Use of consumer imaging devices (web camera, household digital camera, mobile phone camera) as a machine vision device and processing of images taken by these devices
- Demonstration of thermal imaging system

This was the first experience of using machine vision hardware and software for majority of the participants. The participants were also informed about availability of open access image processing software so that the knowledge gained during the training is not lost due to unavailability of software in their respective institutes.

Dr. Nachiket Kotwaliwale was course director while Dr. Karan Singh and Dr. KN Agrawal were the national resource persons for this training.

A valedictory session was held on Dec. 24, 2011 under chairmanship of Dr. LP Gite, I/c. Director, CIAE, Bhopal. The participants expressed high level of satisfaction towards the course content and the efforts put in by different people in organization of the course. They also expressed need for a follow-up programme on this topic with an extended duration.

