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Technology Transfer of Photosynthesis Irradiance Incubator (PI Box)

Between

Space Applications Centre (ISRO)

And

M/s. Tulsi Industries, Ahmedabad

September 10, 2014

Organised by
Technology Transfer & Industry Interface Division
Planning & Projects Group

PI Box Technology Transfer Event

BRIEF ABOUT PI BOX

About

Space Applications Centre (ISRO), Ahmedabad has designed and developed a photosynthetic irradiance incubator (photosynthetron) for marine applications. This is used to measure the photosynthetic-rate parameters (PI) of phytoplankton, the microscopic, photosynthesising green plants of the ocean. PI parameters constitute an important element for modelling and estimating oceanic primary production using remote sensing data. The major components of the photosynthetron are the main incubation chamber, source lamp, lamp housing chamber, flat rectangular bottles on a movable rack, temperature sensor, submersible pump, motor and gear box.

Working

➢The photosynthetron incubates a sample of phytoplankton with a tracer under controlled light gradient provided by a light source and a series of optical screens, designed to simulate light depths of aquatic environment.

➢The incubation chamber houses linearly arranged twelve bottles on a rack containing phytoplankton sample and the rack is attached with a gear system for continuous tilting motion to allow phytoplankton to remain in suspension as in natural environment.

➢The chamber is filled with water which is continuously circulating.

➢A temperature sensor monitors the temperature of the water bath, which helps in maintaining the desired ambient water temperature for the samples.

➢The period of incubation of the sample is programmable.

Potential users:

All laboratories, research institutes, universities involved in marine & oceanographic research especially in the area of primary production by phytoplankton and fisheries

Above: Dr. P K Pal, Deputy Director(EPSA/SAC) presiding over the function.

Below: Shri A. M. Jha, DD, MESA and Chairman TTCC addressing the function.

Above: *Dr. A. K. Shukla(Head Cal-Val)(left)with Partners of M/s. Tulsi Industries*

Below(Left to right): Shri Y P Rana (Head TTID/PPG),
Dr. Ajai (Brahmanprakash Prof.), Shri. R M Parmar (DD, SRA),
Shri Rajkumar Arora (DD, ESSA), Shri Vivek Pandey (Sci./Engr. SE , TTID/PPG),
Shri A. K. Lal (GH, SRA) and Shri K B Vyas (GH, SRA)

Above: *Dr. P. K. Pal signing the ToT agreement*

Below: Shri Kamlesh Panchal and Shri Kirit Panchal, Partners, Tulsi Industries signing the ToT agreement

Above: Dr. Prakash Chauhan, Group Head BPSG/EPSA signing the agreement

Below: Ms. Mini Raman, Sci./Engr. SG, EPSA signing the agreement

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Above: Dr. P. K. Pal, DD, EPSA/SAC and Shri Kirit Panchal, Partner M/s. Tulsi Industries, exchanging the agreement

Below: Shri Ratnesh Kumar, Senior Accounts Officer, SAC receiving the ToT License Fees

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Above: : Dr. Prakash Chauhan, Group Head BPSG/EPSA and Ms. Mini Raman, Sci./Engr. SG, EPSA/BPSG/PMD handing over the PI Box Technology Transfer document to Shri Kamlesh Panchal, Partner M/s. Tulsi Industries

Congratulation to SAC – ISRO Team

Thank you for Kind Cooperation & Support Provided

Looking forward to more technology transfer offers

This was 97th agreement signed by SAC

TTID / PPG Team

Photo Courtesy: Sh. S. M. Bulsara, Photographer, HRDD/PPG