

Organizer:



Implementation organization:



Funded by SME Development Fund



Supporting Organization:



Workshop on Far Infrared Rays Technology

Date & Time

17 April 2009(Tue), 9:30am – 5:00pm

Venue

Lecture Theatre, 1/F., HKPC Building, 78 Tat Chee Avenue, Kowloon

Language

English

Enquiry

Please call Ms Jennie Kwok at 2788 5756 or e-mail: jennie@hkpc.org or Mr Henry Lee at 2788 5738 or email: henrylee@hkpc.org
Website: <http://www.hktrainingonline.com> or www.hkpc.org

Introduction

In order to enhance Hong Kong Product and Equipment Manufacturers' capability in Far Infrared (FIR) technology application, Hong Kong Far Infrared Rays Association (HKFIRA) has successfully applied funding support from SME Development Fund from Trade and Industry Department. The project will deliver a two-day conference and eight workshops. This workshop conference is the second deliverables of this project. This workshop intend to enhance SMEs' knowledge and awareness on FIR technology, its application, productization approaches, FIR certification and conduct demonstration and product disassemble on FIR products.

Content

1) FIR application on household electrical appliance

The application to apparatus for electrical household appliance of the far-infrared radiation includes the heater, the dryer, and the food dish machine, etc. The heat transfer has convection, conduction, and the radiation. Convection as heat transfer gets the warm to human with the heated air. However there are a lot of losses of heat by the outflow of air. The heat loss by conduction is in the heat transmission medium. On the other hand, the radiation is little loss of the heat energy by air etc. Therefore the effect of energy conservation is high and economical. Electrical household heating appliances was adopted from early time in the use of the far-infrared radiation field. The heater for human is adjusted between the infrared radiation characteristic of radiant and the infrared absorption characteristic of the human body. The highly effective infrared radiant is more effective for warm to human. That radiant with infrared characteristic is with all wave length as from the short wavelength infrared spectra to the long wave length infrared spectra. It is good for the infrared radiant for that. Electrical household appliance using infrared radiant as dryer evaporates moisture by the originating infrared energy. High effective of infrared radiant for dryer is agreement between the infrared absorption characteristic of objects and the originated infrared radiation characteristic of the infrared radiant. There is apparatus such as the combustion of an electric rice cooker, meat, and the fish of dish machine in electrical household appliances. High effect of heater for food cooking is between the agreement of the infrared radiation characteristic as those food dish machines and the infrared absorption characteristic of food.

2) Productization design on FIR household electrical appliance

Heater of electrical household appliance is used the electrical current to nichrome wire etc. for generate heat. That generates heat is immigrated to the surface of the infrared radiant and infrared energy is radiated there. The infrared absorption characteristic of object is fitted between the infrared characteristic of radiant. It is gotten high effective to radiant. It is usual that the material converted into the reasonable infrared radiant is made from the ceramics. There are two type radiant. One of infrared radiant has low radiation intensity of the short wavelength region but wavelength from 4μm to longer has higher

Who should attend

Welcome for all who has interest on this topic.

Reservation

Seats are not limited, but on a first-come-first-served basis
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Fee

Free of charge

infrared radiation intensity. It is called Far-infrared radiant. Moreover, one of another radiant has all wavelength radiation intensity high. It is called highly effective infrared radiant. The infrared radiant is made from ceramics of the low thermal expansion not destroyed by heating. It is in the ceramic and there is white cordierite($MgO \cdot 2Al_2O_3 \cdot 5SiO_2$) in one. It becomes a far-infrared radiant. On the other hand, the highly effective infrared radiant is made the mixture of the transitional element oxide such as $MnO_2 \cdot Fe_2O_3 \cdot CoO \cdot CuO$ of firing at about $1200^\circ C$ and then it mixture to add cordierite ceramics. It is to make the highly effective infrared radiant while becoming the amount of additive increases gradually. The highly effective infrared radiant is the best for heater. The reason is that effective infrared rays of $2.7\mu m$ in the wave length to warming the human body can be radiated enough. Moreover, the highly effective infrared radiant is the best also for the food dish. There is apparatus such as the electrical rice cooker, meat, and the fish in electrical appliances dish machine. The agreement between the infrared radiation characteristic of radiant and the infrared absorption characteristic of food is effective to the dish machine which uses them.

Hated effect of far-infrared radiant to moisture is a little. However, it has long wave length infrared rays radiation characteristic which works directly in the muscle of the human body. Therefore, far-infrared radiant feels warmth different from the highly effective infrared radiant.

About the speakers



Dr. Hiroo Takashima, Ph.D.Eng. (Tokyo Institute Technology)
 1951. Finding employment to Pottery Research Institute of Industrial Science and Technology in Ministry of International Trade and Industry. 1993. National Industrial Research Institute NAGOYA of Industrial Science and Technology in Ministry of International Trade and Industry is retired. 2005. Finding employment to Industrial Technological General Institute as Contract staff. 1986. "Research of the Infrared Radiant and its Used mechanism" is Prize according to director general of Science and Technology Agency. 1988. "Research of the development of pottery glaze and pigments and the organization and the structures" is prized from the Ookura amity commemoration foundation. 2002. Service prize is prized from Japan Ceramic Society.

Enrolment Form

Workshop on Far Infrared Rays Technology (17 April 2009)

Fee:	FREE OF CHARGE	
Duration:	17 April 2009 9:30am – 5:00pm	
Company:		
Mailing Address:		
Tel:		Fax:
Participant's Name:	Position:	Email:
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6.		

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