Solar Atmospheres releases furnace temperature surveying procedure

Solar Atmospheres and Solar Manufacturing, Souderton, Pa., released a procedure for temperature uniformity surveying (TUS) of vacuum furnaces to comply with AMS 2750D requirements. The process outlines several considerations for TUS including thermocouple support structure, pre-survey furnace preparation, furnace instrumentation, furnace class, furnace working zone, and standard survey temperatures for most vacuum furnaces. The procedure considers many critical aspects of AMS 2750D that must be fully satisfied to produce acceptable heat treating results, and can be applied by any vacuum furnace user to satisfy their TUS requirements. To download the procedure, visit www.solaratm.com.

Siemens installs new cooling technology at ThyssenKrupp

Siemens VAI Metals Technologies, Erlangen, Germany, installed a new intensive-cooling unit in the hot-strip mill of ThyssenKrupp Steel AG in Duisburg-Beeckerwerth, Germany. The “power-cooling” process enables high-strength steels to be reliably cooled for a wide range of strip thicknesses, which, in turn, enables additional steel types to be efficiently produced with a high degree of precision.

The production of high-strength steels in the upper thickness range of up to 1 in. (25.4 mm) requires high cooling rates. Contrary to laminar-flow strip-cooling processes, power cooling technology allows cooling rates as high as 400 K/s. The cooling section also allows regulating the flow volume over a wide range, which enables the strip-cooling process to be precisely and flexibly controlled. Power cooling can achieve heat flow densities of up to 5 MW/m²; three times higher than the rates achieved with laminar-flow cooling processes. The new cooling system also allows lower flow volumes to be set for a quasi-laminar cooling condition. The intensive cooling unit was scheduled to commence operation in December 2010. www.siemens.com/industry-solutions.

Harper designs furnace with dual functionality

Harper International Corp., Buffalo, N.Y., developed a furnace system with dual functionality for Oak Ridge National Laboratory (ORNL), which is involved in the development of a wide range of carbon materials from renewable resources to replace products currently derived from petroleum.

ORNL needed a continuous thermal processing system to simulate commercial production of carbon materials. The precursor materials vary in both particle sizes and particle shapes, which required two distinctive types of furnace systems; a rotary furnace for one type of material and a mesh belt furnace system for other materials. Harper’s single continuous thermal processing system satisfies both requirements.

The single thermal processing system features a clam-shell design that allows the top half of the furnace to open, exposing the internal section of the furnace. The rotary tube may be removed from the system, allowing for the installation of a mesh belt within the same thermal section of the furnace. Both furnace systems have been designed to be gas tight and operate using a variety of atmospheric gases including reactive and corrosive gases. The systems can operate at temperatures to 1000°C with thermal processing cycle variations from 30 minutes up to 10 hours. www.harperintl.com.