

Gun Drilling Seminar, Tutorial and Exhibition (3-9 Dec 2010)

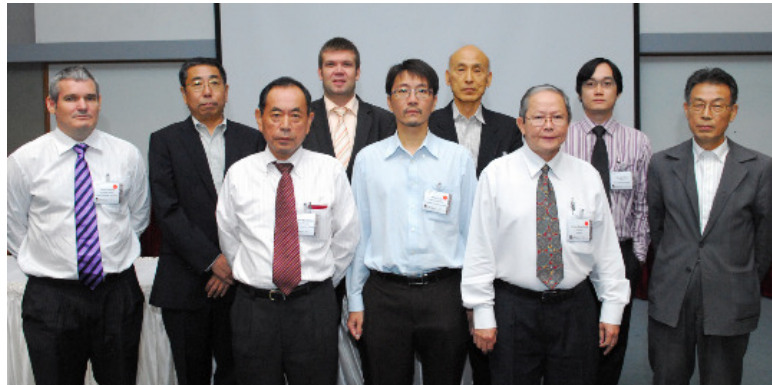
Gun Drilling Seminar - Trends, Applications, Material and Tooling for Deep-Hole Drilling of High Aspect Ratio on Exotic Material: Oil & Gas, Aerospace, Photo Voltaic and Mould Bases



As part of cross-industrial knowledge exchange, a series of gun drilling seminars, tutorial and exhibitions was held for industry. These 3 events attracted 170 participants from the manufacturers of gun-drilled base high value products required by the Oil & Gas, Mould-bases and the Photo Voltaic equipment industry.

▲ Industry expert shared useful knowledge

In the Oil & Gas sector, deep gun drilled holes are created on extremely hard and corrosion resistant, nickel- and chrome-based alloys to serve as safety, control, wire-lines and flow-line holes to allow effective command, control and communication between the down-hole tools with the surface control crew. In the Mould-Base and Photo Voltaic equipment manufacturing sectors, gun drilled holes are predominantly created to serve as cooling channels to uniformly distribute the heat generated from the multi-cavity moulding and the PVD/CVD processes. The diameters of the holes range between 6-8mm and depths range between 4-5m deep, making traditional gun drilling techniques highly inadequate for these high aspect ratio holes that has to be applied in the current harsh drilling environment.



▲ Invited Speakers at the Gun Drilling Seminar

Ten prominent international speakers from Germany, UK, USA, Japan and Singapore - from machine tool builders; gun drill and tool manufacturers; specialty material and lubricant manufacturers together with SIMTech research scientists, shared their attempts in addressing these challenging issues. Collectively, these experts recognised that it is crucial to combine their expertise to control the hole's straightness, improve yield, productivity and eliminate costly rejects.

Tutorial on Gun Drilling - Dortmund University of Technology

As part of the PE COI's expert consultant programme, Professor Dirk Biermann and Ms Nadine Kessler, Research Assistant presented a comprehensive description of the various gun drills, optimisation of the boring and trepanning tool geometry for different deep-hole drilling processes; clamping sleeves; cutting fluid pressure and flow rate.



▲ Miss Nadine Kessler and Prof D Biermann – Technical University of Dortmund, Germany

Gun Drilling Exhibition

In conjunction with the seminars and workshop, a 3-day exhibition was held to provide companies a rare glimpse of the new machine tools, gun drills, materials and lubricant required to make Singapore a sustainable place for the manufacture of oilfield and down-hole equipment; photo voltaic chambers and high value multi-cavity step moulds.



▲ Gun Drill Samples Exhibited