

MIRDC, MEIFI Confer First M&E Industry Awards

The Metals Industry Research and Development Center (MIRDC) and the Metal Engineering Industry Foundation, Inc. (MEIFI) conferred the first metals and engineering (M&E) awards to individuals in recognition for outstanding achievements and contributions in strengthening the metals and engineering industry of the country. The awarding was made during the M&E Conference held on 17 June 2010 at the Heritage Hotel, Roxas Blvd., Pasay City. The event is in line with the 2nd annual celebration of the Metals and Engineering Week (14-18 June 2010) and held parallel to the 44th Founding Anniversary of the MIRDC (18 June 2010).

MEIFI Chairman Eduardo N. Chua Co Kiong and MIRDC Executive Director Arthur Lucas D. Cruz handed-over the 2010 M&E awards to the following:

M&E Man of the Year –
Dr. Ceferino L. Folloasco
Tool and Die Maker of the Year – Mr. Jimmy T. Chan
Metalworker of the Year –
Mr. Philip N. Tan
Fabricator of the Year –
Dr. Ceferino L. Folloasco
Steelmaker of the Year –
Mr. Wellington Y. Tong
Welder of the Year –
Mr. Gregorio A. Coronel



Dr. Ceferino L. Folloasco, the M&E Man of the Year 2010

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Technology Roadmap

The Metals Industry Research and Development Center (MIRDC) in collaboration with the Philippine Council for Industry and Energy Research and Development (PCIERD) formulated a technology roadmap for selected metals and engineering sectors, i.e., machining and fabrication, metalcasting and tool and die. Representatives from the metals and engineering industry, customers, suppliers and the government sector actively participated as committee members in this undertaking to develop a highly focused technology roadmap identifying specific priority needs of the M & E industries in terms of products and markets, processes, technologies and human resources critical to the development of the M&E industries, thus, gain competitive edge in the global arena.

Series of dialogues for each sector were conducted between April – June 2010 by the MIRDC following


the Technology Roadmap approach of PCIERD. The different sessions successfully accomplished the following: a) crafting the vision and mission of the technology roadmaps; b) understanding the current situation of the industry through information provided by invited Resource Speakers and SWOT Analysis made by the committee members, and identifying top issues using estab-

lished criteria; c) setting of strategies to address the top issues through mind mapping exercise; and d) laying-out of the technology roadmaps for year 2011-2015. The output of these series of dialogues were presented to representatives of the metals and engineering sectors in Visayas (Cebu City) and Mindanao (Cagayan de Oro)

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Arthur Lucas D. Cruz, CESO IV
Executive Director



Mid this year, the Center made a remarkable accomplishment in formulating the 5-year Metals and Engineering Sector Technology Roadmaps. Strategic partnership with key industry players and other relevant organization from the government and private sector were harnessed to come up with highly focused technology roadmaps towards the development of the metals and engineering industries for global competitiveness. Another notable achievement is the conferring of first M&E awards for outstanding achievements and contributions of industry players in the development of the country's metals and engineering industry. In line with these, the Center successfully celebrated its 44th Founding Anniversary and the 2nd Annual Metals and Engineering Week held at Heritage Hotel, Pasay City, an event made possible in cooperation with the Metal Engineering Industry Foundation, Inc. (MEIFI).

Moreover, we take pride in participating in different exhibitions such as the prestigious National Science and Technology Week (NSTW) of the DOST held at Manila Hotel, the first Philippine International Ecological Show (PINES) of CITEM-DTI held at SMX and the Northern Luzon Regional Science and Technology Fair conducted in Santiago City, Isabela. The technologies featured are the locally-developed coco coir machines such as bio-log extrusion machine and defibering machine; micro-rice mill, an MIRDC assisted technology; brush-plating technology; and non-cyanide electroplating technology, a technology that gave recognition to the Center for

winning the first prize during the 8th Regional and National S&T Competitions in Industry and Energy, NCR Cluster.

These enduring endeavors had made MIRDC to embark its efforts of providing the highest standards of quality service by continually improving our business processes and attaining outstanding customer satisfaction. The Center continuously enhances its efforts to maintain and sustain its 9001 Certification and ISO/IEC 17025 Accreditation. Similarly, the MIRDC continually assists other DOST agencies in their efforts to pursue ISO certification and accreditation by providing consultancy and training services.

Lastly, on June 22, 2010, the MIRDC Rationalization Plan was finally approved by the DBM after several years of thorough evaluation. Our existing eight divisions were downsized into six divisions with a total of 226 plantilla positions. The Center truly recognized the zealous efforts of our rationalized employees for serving the MIRDC as public servants and being part in the attainment of the Center's goals and objectives in the past. We will surely miss the help and joy that they accorded to each and everyone in the Center. From the MIRDC family, we wish our rationalized employees good luck and may they prosper in their new endeavors.

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Awardees of the Metals and Engineering (M&E) industry awards pose for posterity: (from Left) Mr. Roberto M. Cola representing Mr. Wellington Y. Tong - 2010 Steelmaker of the Year; Mr. Fernando M. Opeda for Mr. Gregorio A. Coronel - 2010 Welder of the Year; Mr. Philip N. Tan - 2010 Metalworker of the Year; Dr. Ceferino L. Follusco - 2010 Fabricator of the Year & M&E Man of the Year; Mr. Jimmy T. Chan - 2010 Tool and Die Maker of the Year

DR. CEFERINO L. FOLLOSCO, the 2010 Fabricator of the Year, was selected from among the awardees as the 2010 M&E Man of the Year, the topmost award. Notably, Dr. Follusco provided important contributions to the M&E industry by sharing his expertise to M&E business organizations. He has proven leadership qualities as administrator, industrialist, and academician and is multi-awarded having received several recognitions to include among others, Outstanding Professional Agricultural Engineer of 1982 by the Professional Regulations Commission (PRC), ASEAN Engineering Award in 1966, The Outstanding Filipino (TOFIL) Awards of 2001, MERALCO Award for Engineering and Applied Sciences in 1996, Outstanding Science Administrator and Academician by the National Academy of Science and Technology in 2001. Dr. Follusco had served as DOST Secretary (1989-1992), DTI Undersecretary (1986-1989), and Governor of the BOI (1986-1989). He now chairs the C.L. Follusco Group of Companies with 10 subsidiaries.

Mr. JIMMY T. CHAN, the 2010 Tool & Die Maker of the Year, is a major stakeholder in the M&E industry. He has founded several firms that include steel service center,

precision tooling and die shop, and plastic manufacturing shop. Mr. Chan is now President and General Manager of Maximetal Industries, Inc. and member of the Board of Directors of the Stainless Steel Industries, Inc. and Prime Industrial Corp. During his term as President of the Philippine Die and Mold Association (PDMA), the Philippine die and mold industry ably immersed with the rest of Asia through affiliation with the Federation of Asian Die and Mold Associations (FADMA), where he served as Vice Chairman in 1998-1999. Also, he was among those who strongly supported the establishment in 1997 of the JICA-assisted project on Precision Tool and Die Center at MIRDC that continuously benefits the local tool and die industry.

Mr. PHILIP N. TAN, Chairman, President, and Chief Executive Officer of Wellmade Motors and Development Corporation, Duratech Heavy Industries, Inc., and Wellmade Innovative Technologies, Inc., was adjudged the 2010 Metalworker of the Year for his several accomplishments that made an impact to the M&E industry. His accomplishments include among others, organizing the Metalworking Industries Association of the Philippines (MIAP) - Kidapawan Chapter in 2005 and serving as MIAP National President

from 2005-2007, being named as one of the 50 Men and Women of Science during the DOST's Golden Anniversary in 2008, and getting the Most Outstanding SME in Productivity and Quality (2005) recognition by the Office of the President.

The President of Pagasa Steel Works, Inc., Mr. WELLINGTON Y. TONG, bagged the 2010 Steelmaker of the Year. In order to protect the interest of the steel industry and its consumer, Mr. Tong spearheaded the revisions of DTI Administrative Orders (DAO) - DAO 2: Series 2007, Defining Responsibilities and Liabilities of Manufacturers, Importers, Traders and Retailers of Mandatory Products and DAO 5: Series 2008, New Rules and Regulations on the Issuance of Import Commodity Certificate for Products Covered by Mandatory Standards. Mr. Tong actively participated in the formulation of Philippine National Standards for reinforcing steel bars, angle bars, wires and nails by being the Chairman of the Bureau of Product Standards Technical Committee on Long Steel Products. He currently serves as Vice President of the ASEAN Iron and Steel Industry Federation (AISIF).

The 2010 Welder of the Year is awarded to Mr. GREGORIO A. CORONEL, Assistant Vice President and General Manager of Atlantic Gulf and Pacific Co. of Manila (AG&P). Mr. Coronel has proven himself to be an outstanding welding practitioner with more than 20 years experience in steel fabrication and construction industry. He is also a trained NDT inspector with Level 1 and II licenses in Ultrasonic, Radiographic, Magnetic Particle and Liquid Penetrant Testing. Mr. Coronel has embarked on an ambitious development for his company focused on upgrading traditional welding equipment into new technologies from outside the country. Currently, he serves as Vice President of the Philippine Welding Society (PWS).

MIRDC Celebrates 44th Anniversary

The MIRDC celebrated its 44th founding anniversary last June 18, 2010. The event commenced with a tree planting activity participated in by officials and employees of the Center. This is in support to the government's program to preserve the environment and address the issue of climatic change.

Other activities include a thanksgiving mass solemnized by Fr. Orlino Ordoñez of the Holy Rosary Parish; a *salu-salu* together lunch; oath taking of the new set of officers of the MIRDC Employees Labor Association (SALEM) and the Board of Directors of the MIRDC Employees Mutual Assistance and Benefits Association, Inc. (MEMABAI); raffle for fun and bingo social. The MIRDC's Music Tele Video (MTV) and updated institutional video were also launched. As part of the week-long celebration, Executive Director Arthur Lucas D. Cruz tasked concerned MIRDC staff to conduct technology demonstration for nearby communities on June 15, 2010. Technologies offered were spincasting and brushplating.

Employees who excelled in their performance were given recognition. Ms. Ma. Gracia M. Peralta was given a certificate of recognition for her innovative ideas and the pride she gave to the Center as the first prize winner in the Regional Cluster Competition, covering the National Capital Region

(NCR) during the 8th Regional and National S&T Competitions in Industry and Energy with the project study "Development of Non-Cyanide Electroplating Technology," sponsored by the Philippine Council for Industry and Energy Research and Development (PCIERD) last 24 February 2010. Dr. Dominic S. Guevarra, Zenaida L. Jumilla, Jocelyn F. Dime and Jonifer Rose Bernaldez, were acknowledged for their noteworthy contribution to the success of the Country's first-ever May 2010 automated national and local election as certifiers under the DOST project entitled "2010 Automated Election System Board of Election Inspectors' Certification Programs." On the other hand, a Gantimpala Agad Award was given to Alfredo Z. Panganiban and Reynaldo M. Loreto for their exemplary courage shown during the fire incident at the Chemical Laboratory Section which prevented further damages or losses to the Center. Also, the core values awards were presented to Mr. Fred P. Liza and Ms. Evelyn E. Gallardo. Other employees were awarded for their outstanding performance ratings while some were declared hall of famers for their outstanding performance for five successive years.

In conjunction with the MIRDC anniversary celebration is the Metals and Engineering (M&E) Week

celebration highlighted by the M&E conference held on 17 June at the Heritage Hotel, Pasay City. Technology roadmaps for the machining and fabrication, tool and die and metalcasting sectors were presented during the event coupled with an awarding ceremony for outstanding metalworkers under different categories.



Technology Roadmap...from cover

on June 01 and May 27, respectively to validate the identified top issues and strategies set to come up with a national technology roadmaps for machining and fabrication, metalcasting and tool and die sectors.

The developed technology roadmaps of the selected sectors will serve as a guide for the MIRDC in terms of priority research needs, prioritization of intervention and assistance relative to manpower and facilities upgrading, strategic partnership with industry and other relevant organization from the



M&E Celebration at the Heritage Hotel

private and government, among others, towards the development of the metals and engineering industry. The technology roadmaps were presented to the stakeholders of the industry through a one-day Conference held on June 17, 2010 at the Heritage Hotel, Pasay City. The conference is timed with the celebration of the 2nd Annual Metals and Engineering Week with the theme "Strengthening Strategic Partnership Towards Globally Competitive Metals and Engineering Industry."

MIRDC Participates in 2010 NSTW Celebration

The Department of Science and Technology (DOST) with its new secretary, Engr. Mario G. Montejo, proudly celebrated its 21st “NATIONAL SCIENCE TECHNOLOGY WEEK” from July 19 to 20, 2010. The annual science and technology fair was held at the Centennial Hall, Manila Hotel.

Themed as “Filipinnovation: The Way Forward,” this year’s NSTW showcased the S&T interventions that cater to the growing needs of Filipinos. The program of activities includes,

among others, presentation of business opportunities of industry partners and scientific forum.

In line with the event, the MIRDC featured its locally-developed technologies such as bio-log extrusion machine and defibering machine, and MIRDC-assisted technology on micro rice mill. These technologies provide opportunities for domestic economic growth. Mr. Virgilio Lanza of VL Industech Corp., one of the beneficiaries of MIRDC and DOST assistance, was among those who presented their

experiences particularly on the impact of the government intervention they received.

Further, the Center conducted an open house from July 21-23, 2010. The MIRDC featured its CNC machine and rapid prototyping equipment. Also, it offered appreciation courses on 5S and CNC EDM-Wire Cut. It was attended by representatives from the industry and academe e.g., company managers, university instructors and students.



Left: Engr. Emerito Banal and Ms. Rosalinda Cruz explain how the Micro Rice Mill machine works to one of the guests during the exhibition
Right: Opening proper of the NSTW 2010 event at the Manila Hotel

MIRDC, MEIFI Lead “Metals and Engineering Week”

In the pursuit of giving a boost to the metals and engineering industry, the MIRDC and the Metal Engineering Industry Foundation, Inc. (MEIFI) backed up the proclamation of the “Metals and Engineering Week.” Under their efforts, President Gloria Macapagal-Arroyo issued Proclamation No. 1806 on May 24th declaring the period from June 14-18, 2010 as “Metals and Engineering Week.” The celebration is timed with the MIRDC’s 44th founding anniversary (June 18th).

In observance of this year’s “Metals and Engineering Week”, the Center conducted a series of industry dialogues with the metals and engineering (M&E) industry to

formulate M&E technology roadmaps. The output was presented during the M&E Conference held on June 17, 2010 at the Heritage Hotel, EDSA cor. Roxas Blvd., Pasay City.

Moreover, outstanding key industry players were given recognition for their outstanding achievements and contributions in strengthening the metals and engineering industry of the country. The awardees were selected by their individual professional associations such as the Philippine Die and Mold Association (PDMA), Metalworking Industry Association of the Philippines (MIAP), Agricultural Machinery Manufacturers and Distributors Association (AMMDA), Philippine

Iron and Steel (PISI), Philippine Welding Society (PWS), Philippine Metalcasting Association, Inc. (PMAI), Society of Manufacturing Engineers (SME), Meycauayan Jewelry Industry Association (MJIA), Forging Industry Association of the Philippines, Inc. (FIAPI), and Original Equipment Manufacturers’ Association of the Philippines (OEMAP).

The Center continuously provides support to further enhance the development of the country’s M&E industry towards global competitiveness.

Conference-Workshop on Sustaining Laboratory Accreditation

A conference-workshop on Sustaining Laboratory Accreditation in all DOST Laboratories in Accordance with ISO/IEC 17025 was held last July 27 to July 29, 2010 from 8:00 am to 5:00 pm at the Golden Prince Hotel, Cebu City.

Topics during the conference-workshop include “Project Accomplishments, Plans and Programs”, “Cost of Accreditation”, Analysis of PAO (Philippine Accreditation Office) Assessment and Surveillance Audit”, “Electronic Documents and Records: towards a paperless Management System”, “Continual Improvement Options and Practices”, “Performance of RSTLs (Regional Standards and Testing Laboratories)”, “Continual Improvement Options and Practices”, “Performance of RSTLs in CY 2008-2009 PT (Proficiency Testing) programs for Chemical Testing”, Performance of RSTLs in CY 2008-

2009 PT programs for Microbiological Testing”, “FNRI Proficiency Test Programs Toward Sustainable Accreditation”, “Measurement Audits: Substitute for Proficiency Testing in Calibration”, “Importance of Intermediate Checks in assuring Measurement Traceability”, “How to implement an in-house ISO/IEC 17025:2005 Awareness Seminar”, and “Role of Customer Satisfaction Measurement on Sustaining Laboratory Accreditation.”

This three-day activity also featured testimonial accounts on experiences and concerns of RSTLs and RDIs and the presentation of the Project Proposal on “Sustaining the Laboratory Accreditation of DOST RDI and Regional Office Testing and Calibration Laboratories.”

The resource speakers included Dr. Agustin M. Fudolig, OIC-Office of the Deputy Executive Director for

Industry Development, MIRDC; Dr. Rio S. Pagtalunan, OIC-Analysis and Testing Division; Dr. Benilda S. Ebarvia, Senior Science Research Specialist-Chemistry Laboratory, Standards and Testing Laboratory, ITDI; Ms. Teresita R. Portugal, Chief-Food Quality and Safety Section and OIC-Laboratory Services Section, FNRI; Ms Ruby J. Apilado, Senior Science Research Specialist – FNRI; Engr. Arlene G. Estacio, Unit Head-Instrumentation and Metrology Section, MIRDC; Engr. Rodnel O. Tamayo, Chief-Instrumentation and Metrology Section, MIRDC; Engr. Florante A. Catalan, OIC-Physical Laboratories Section, MIRDC; and Ms. Evelyn E. Gallardo, Supervising Administrative Officer, MIRDC.

Farmer-Friendly Micro Rice Mill



Because rice is one of the staple foods of the Filipinos, the Eagle High Venture Inc., one of the participants of the MIRDC's Technology Business Incubation program, sought the assistance of the Center to develop components of a farmer-friendly micro rice mill equipment model 150. The machine has a 3-hp electric motor or 8 hp gasoline or 6 hp diesel engine. Energy consumption is 1 kwh per hour using electric motor or 1 liter fuel per hour using engine. The micro rice mill is able to produce up to 250 kgs or 5 cavans per hour and need only one operator to operate. It's overall dimension is 82 cm (L) x 85 cm (W) x 110 cm (H) and weighs about 40 kg with engine.

The equipment consists of five parts: the stand, milling chamber, fan blower assembly, aspirator and the bran segregation assembly. The machine is compact and portable and performs hulling and polishing in one

operation; produces good quality milled rice up to 70% depending on paddy moisture content and variety; uses low power requirement; provides easy operation and maintenance and results in high milling rate of 70% depending on the initial paddy quality resulting to greater utilization, faster capital recovery and higher income potential.

The use of low cost portable rice milling equipment is designed within the reach of a family, villages as well as small cooperatives without sacrificing the quality of the paddy being milled. The equipment also provides the user an access in the milling of by-products like bran, which can be used for livestock feeds as well as the rice hull which is also utilized as fuel for cooking and drying.

Paddy milling is one of the most important process in the rice post production system. It transforms paddy into rice ready for cooking.

Making buildings more energy efficient

Buildings are an important class of energy consumers and improving their efficiency will have a positive impact on the economy and sustainability. Over the years, the Department of Mechanical Engineering has been collaborating with the Building and Construction Authority to develop suitable indicators to quantify the energy performance of air-conditioned commercial buildings and their envelopes. The effort resulted in the adoption in 2000 of a new formulation termed the Envelope Transfer Value (ETTV). In the above work, the correlation of envelope design and energy performance of a building has been established and this has become the starting point for a major shift in focus from a prescriptive approach in building energy standard to one that is performance based. With the ETTV, it is now possible to incorporate the measure of building envelope performance into the energy consumption estimation of a building.

In order to make further gains in energy efficiency, a collaboration with BCA was set in 2006 to develop an equivalent envelope performance criterion for application to residential buildings. In 2008, the new Residential Envelope Transmittance Value (RETV) was established. Both the ETTV and RETV are now mandatory criteria in the Singapore Green Mark certification scheme.

In another project funded by the BCA, the ME team is developing a guarded-hot-box facility to enable the testing of building envelope materials and components to determine their thermal performance characteristics. The quantitative measures will allow engineers and architects to make accurate design and standards compliance calculations. Attempts have also been made to extend the experimental facility to enable measurement of solar optical properties of glazing new building integrated PV panels.

Given the current concerns on greenhouse gas emissions and the adverse consequences of climate

change, the team has initiated a study on energy related building services that have an impact on the carbon footprint of a building.

Source: *Engineering Research*, vol. 25 no. 1 February 2010, p. 16

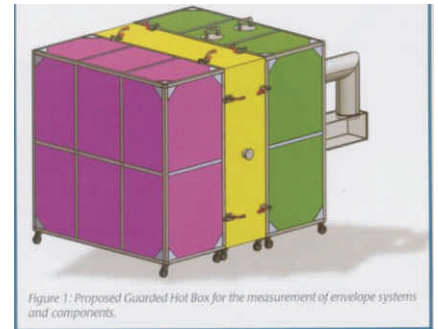


Figure 1: Proposed Guarded Hot Box for the measurement of envelope systems and components.

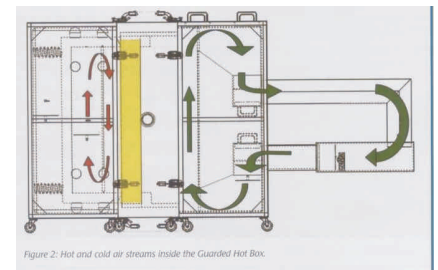


Figure 2: Hot and cold air streams inside the Guarded Hot Box.

Merging metal

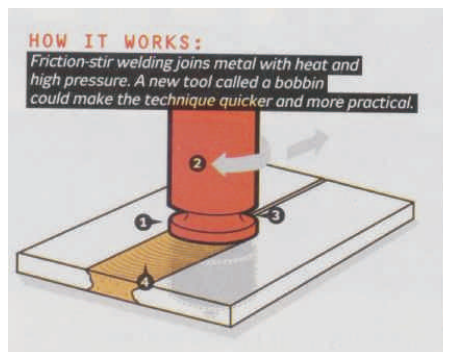
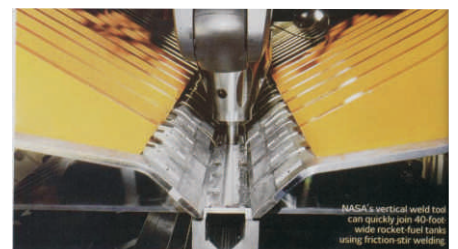
Joining the giant aluminum alloy plates used on large ships and spacecraft usually requires teams of workers with handheld arc welders. But having to rely on human labor can cause costly delays, and manufacturing companies are eager to develop new methods. One of the most promising is friction-stir welding, which uses a spinning rod to generate enough heat to soften the aluminum and to push the alloy's molecules together with 15,000 pounds of pressure. A friction-stir welding machine moving at 8 inches a minute can join inch-thick alloy plates in a single pass, while traditional arc-welding would require over a dozen welds to complete the same seam.

But the technology does have a downside: the machine need extra hardware to absorb the intense

pressure, known as Z-force. Bulky and expensive, the hardware limits the length of the welds and often relegates friction-stir welding to big-dollar government programs in need of precise joints, such as the Navy's Littoral Combat Ship and NASA's Ares I-X test rocket, which lifted off in late 2009.

A new tool called bobbin may help make the method mainstream by simultaneously joining the plates and absorbing pressure. Next-generation friction-stir welding devices could weld steel, combine heterogeneous metals and make welds of indefinite length by perching bobbins on dollies that move along lengthy seams.

Source: *Popular Mechanics*, May 2010, p.24



Helping trains run properly and safely

Centerless grinding is instantly associated with extremely productive, high-precision machining of small- and medium-sized workpieces. The cylindrical grinding experts at Mikrosa have now demonstrated that the centerless grinding process is also suitable for unusually large workpieces. Railway axles for the Russian rail car building industry will be machined on the KRONOS L 660 centerless grinding machine by MIKROSA in the future. The broad-gauge axles are 2,200 mm long and weigh almost 500 kg. The bearings have a diameter of 150 mm. The KRONOS L 660 is part of a German-engineered automated production line

and grinds the workpieces with tolerances of $\pm 10\mu\text{m}$. The customer uses the machine to grind bearing seats and the adjacent end faces on both sides of the axle in two separate operations. In between these processing steps, the railway axle is turned round outside the machine. And in-process measuring device controls the entire grinding process during the machining operations. Complete machining of one axle only takes five minutes including turning.



Almost 500 kg: Machining a railway axle on the KRONOS L 660 takes just five minutes

Source: Motion the Customer Magazine of the Schleifring Group, Issue 1/2010, p.38

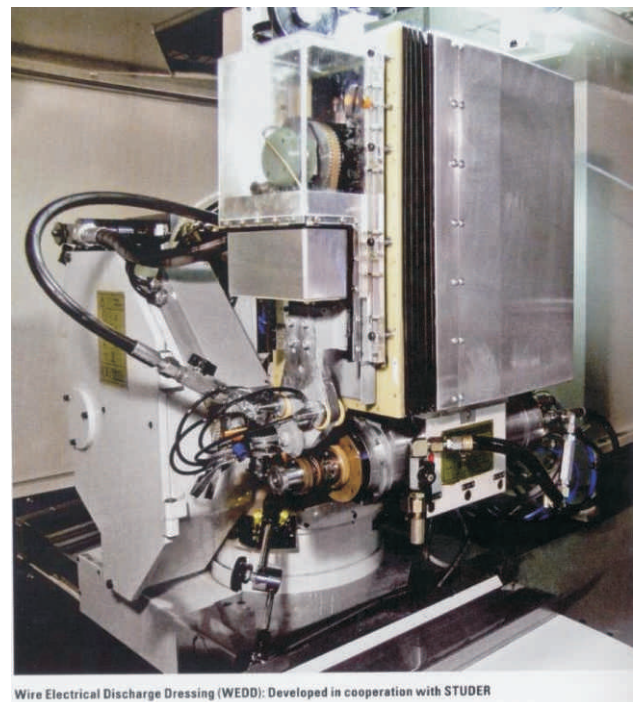
New dressing unit

A highly promising process is Wire Electrical Discharge Dressing (WEDD). Metal bonding is predestined for grinding tools with superabrasives because of its tight bonding to the grain and its good thermal conductivity. However, the application of such bonding is restricted due to difficulties in dressing. A new dressing unit based on wire erosion has therefore been developed on a STUDER S31 cylindrical grinding machine, enabling on-the-machine dressing. Since this dressing unit has two independent moveable axes, it can be used to dress the grinding tool parallel (simultaneously) to the grinding process. Wire erosion allows practically any desired contour to be produced without the need to rework the electrodes. This is continually regenerated by feeding the wire longitudinally.

Precision is achieved by constant wire feed speed and accurate guiding of the wire. In the project, the grinding process generating the part has precedence. The erosion dressing is subordinate to it. In spite of less-than-perfect conditions in the working area

of the grinding machine, all the important requirements for the dressing process are met. The WEDD process gives very high material removal rates and sharp contour edges when profiling, and also produces a higher grain height over the bond when sharpening. The grinding wheel is very efficient after WEDD because of the greater chip pocket. Using WEDD-dressed grinding wheels, silicon nitride was ground at a specific material removal rate. G values of more than 2000 were achieved with lower process forces compared with the conventional dressing method. The grinding fluid was used as the dielectric.

The very promising results on the WEDD prototypes gave the Institute the impetus to industrialize this new dressing technology together with STUDER. The intriguing question is



Wire Electrical Discharge Dressing (WEDD): Developed in cooperation with STUDER

the extent to which the WEDD can be applied for other electrically conductive bonding systems and grain types.

Source: Motion The Customer Magazine of the Schleifring Group, Issue 1/2010, p.28

DENR to Study Viability of Putting Up Integrated Iron and Steel Plant in RP

The Department of Environment and Natural Resources (DENR), through the Mines and Geosciences Bureau (MGB), will assess the viability of establishing an integrated iron and steel facility in the country.

DENR Secretary Horacio Ramos said the move is prompted by the unstable and increasing prices of iron and steel in the world market which might impact the local economy in terms of possible higher prices of vehicles and consumer products.

“The country is endowed with iron resources that can supply the iron ores and concentrates for the planned integrated iron and steel facility. With that, the possibility of making the iron and steel industry as a major backbone of the country’s industrialization program is extremely favorable,” Ramos said.

In his report to President Arroyo, Ramos recommended the creation or revival of a work and study group for the integration of the Philippine iron/steel industry utilizing indigenous iron ores.

The group is tasked to fully assess the iron ore potential of the country

(e.g., the iron ore deposits in Sta. Ines, Antipolo, Rizal, Abra de Ilog in Occidental Mindoro, Midsalip in Zamboanga del Norte). Most of the known Philippine iron ore deposits, terrestrial or offshore, are magnetite deposits that are suitable for a direct reduction furnace.

“They will also study the viability of setting up an iron processing/steel plant. The estimated minimum iron ores requirement for such a plant is around 2.4 million tons per year, and the estimated capital expenditure for such plant is around \$1.6 billion,” Ramos noted.

Apart from this, the group will study the package of incentives that can be given to mining companies producing iron ore and to companies willing to put iron ore/steel plants.

“They will check the option of imposing government control on the exports of iron ore within the next five years, taking into consideration the need to conserve the resource for the possible establishment of iron ore/steel processing plants as well as the rights and privileges of companies exploring and/or producing iron. This

should also include a study on possibly imposing controls on the price of substitute materials (e.g. cement) which price might increase,” Ramos said.

The DENR chief said he has already directed the MGB to come up with an updated resource inventory for iron and other iron-bearing deposits in the country.

He said the proposed iron and steel facility is a brainchild of the Board of Investments of the Department of Trade and Industry, the Metals Industry Research and Development Center of the Department of Science and Technology, and the MGB. The study is estimated to cost P20 million and could be undertaken in two years.

Ramos said in past two weeks, the price of iron ore in the world market has shot up to \$120 to \$130 per metric ton from the \$70 per metric ton price in 2009.

Source: The Philippine Star, 7 June 2010

Semicon, Electronics Sector Being Revitalized

The semiconductor and electronic business in the Philippines is being revitalized this year through the initiative of the Congressional Commission on Science, Technology and Engineering (Comste) by forging an agreement with the Taiwan’s Industrial Technology Research Institute (ITRI).

The agreement is to assess the state of the Philippine Science and Technology System and provide research and development support for it.

Through the process, the Philippine semiconductor and electronic sector which was down in the past years as many of its multinational companies or corporations transferred their plants to other

neighboring countries in Asia to be away from labor disputes between the employer and the employees and avail itself of cheap labor.

As a result, the Philippine semiconductor and electronic sector can exploit worldwide recovery in sales which is affected by the recent global recession.

Sen. Edgardo J. Angara said Comste, which he chairs, has continued funding the engineering, research and development for technology in eight universities that provide scholarships in master’s and doctoral degrees in various engineering fields.

“It is expected that with the agreement the semiconductor and electronics sector will boom their sales and pave the way to climb up the

technological ladder as well,” Angara said.

The senator also said that this will lay the groundwork for the creation of the Philippine Industrial R&D Institute (IRDI) which was already allotted funding this year.

“Similar to Taiwan’s ITRI, the IRDI will spur the necessary research and development, and link it to industries to produce innovative products and services,” he added.

Source: The Philippine Star, June 7, 2010

Extrusion Machine for Coco Coir Developed

Coir fiber logs are biodegradable coir peat logs (decomposed ground coconut husks pulp) which are tightly packed in tubular netting. They are 100% natural materials, excellent planting medium additives which add fertility to the soil after biodegradation, high tensile strength, high water absorbency, eco-friendly, and wildlife safe.

Coco logs are available in variety of lengths and density for different applications. As the logs are resistant to the forces of water, the logs can be used to slow down the velocity of storm water run-off, thus stabilizing slopes. They are great for shorelines/river embankment stabilization and forest slope rehabilitation. It also provides bedding where the seedlings and/or cuttings are inserted into logs with sediment. As the coconut fiber logs biodegrade, the plants develop a well-established root system in the shoreline sediment to retain the soil in place. Moreover, the logs are great for use in catch basin protection,

keeping unwanted pollutants from entering into sewer systems.

For maximum utilization of coco coir, the MIRDC developed a manual bio-log extrusion machine that compresses coco fibers while encapsulating it in a geotextile net, the so-called coir fiber biologs. The machine measures 3000 mm x 1030 mm x 502 mm and capable of producing 30 units of coco fiber biologs per day by a novice operator. The manufacturing cost of the machine is approximately P40,000.00.

The bio-log extrusion machine is a promising research for coir fiber since the Philippines is among the top coconut-producing countries. The machine

will not only generate employment for coco processors, but also increase the utilization of coconut coir on productive and commercial scale.



Investments to Sustain Rapid Growth of Electronics Exports, says SEIPI

The impressive rebound of the electronics industry can be driven into sustained high growth if the Philippines embarks on an aggressive investment promotions campaign aimed at luring in the big multinationals, officials of a major electronics association said.

Semiconductor and Electronics Industry in the Philippines, Inc. (SEIPI) president Ernie Santiago and chairman Arthur Young stressed their views in a press conference on the sidelines of this year's trade exhibit at the SMX convention halls in Pasay.

"The multinationals are now reviewing their global strategies and they are determined to make a presence in Asia," Santiago said.

"They realize that China is not the only player. The reality is, the China plus plus scenario is at work and the Philippines must be made part of the investment destinations," he explained.

He explained that the country must take full advantage of the smooth transition of government recently pulled off while Thailand is still struggling to form a new government.

"You must get out and get the investments," added Young. "It all redounds to investments. If you order new machinery for added capacity today, it will be six months before it gets delivered, and two years to reap the higher growth. Texas Instruments (TI) decided to expand in Clark in 2007. It is reaping the dividends this year."

The electronics industry leaders further pointed out that the spectacular growth of their industry in the 1990s that peaked at \$2.16 billion in 1995 fueled double-digit annual growth in export. This sector propelled electronics to be the country's leading export and since then captured at least 60 percent for total export revenues.

Investments slowed down in the

past decade but jumped again to \$1.4 billion in 2007 on the back of the decision of TI to put up its new manufacturing facilities at the Clark Freeport.

At the rate the industry has been recovering, its leaders expect exports this year to edge the performance in 2008 at \$29 billion yearly sales. Their previous projection is a growth of about 29 percent this year which actual figures in the first four months have been revising upwards.

"A 45 percent growth will overtake exports of \$31 billion in 2007 which may not yet be attained", Santiago said. Robust growth is still expected next year but may not be as spectacular as this year due to under capacity of the local plants.

Source: Philexport News and Features, The Philippine Star, June 7, 2010

Seven New Management Tools

Continuation from previous issue

These tools which are useful in planning and solving problems are as follows: Tree diagram, affinity diagram, relations diagram, arrow diagram, process decision program chart, matrix diagram and matrix analysis. Tree, arrow, relation diagrams, affinity diagram were tackled in the previous issues, process decision program chart (PDPC) will be discussed today.

Process Decision Program Chart

PDPC is a technique for achievement of the original target and/or to escape fatal failures by preparing the measures against foreseeable undesirable events in the future. It is a method originally proposed by Jiro Kondo, to foresee various obstacles to reach a desired goal and to prepare countermeasures beforehand. The PDPC method is used for example, “To enlarge the sales amount of a company through sales representatives”, “To solve the bottleneck technologies in product development before starting its production,” and “To find out miscellaneous actions to protect various critical accidents in a chemical plant.”

Application: Planning execution programs

Steps in QC story:

- Theme selection
- Countermeasures

Actual fields of application:

- Planning implementation programs in management by objectives.
- Planning implementation programs in technology development
- Prediction of critical accidents of a system and planning prevention measures
- Planning countermeasures to defectives in production process
- Planning measures in the process of sales negotiation

It is useful for controlling the progress of a project with uncertain and unexpected elements in its initial program (Figure A).

1. In research and development program, it is usual to encounter unexpected troubles during its process. This method is useful to adjust the course of the research and development to the success, choosing the secondary means to solve those unexpected troubles adaptively as those happens.
2. In sales activities, unexpected or undesirable requirements are encountered day by day that are raised from customers or competitors. By conducting suitable and adaptive actions to the requirements, we can expect to regain the original course of actions.

How PDPC is made:

The fundamental steps in making PDPC is as follows:

1. Plan a shortest schedule in an optimistic manner.
2. Think of the cases when some of the schedule does not go as planned.
3. Prepare counter actions against the troubles.

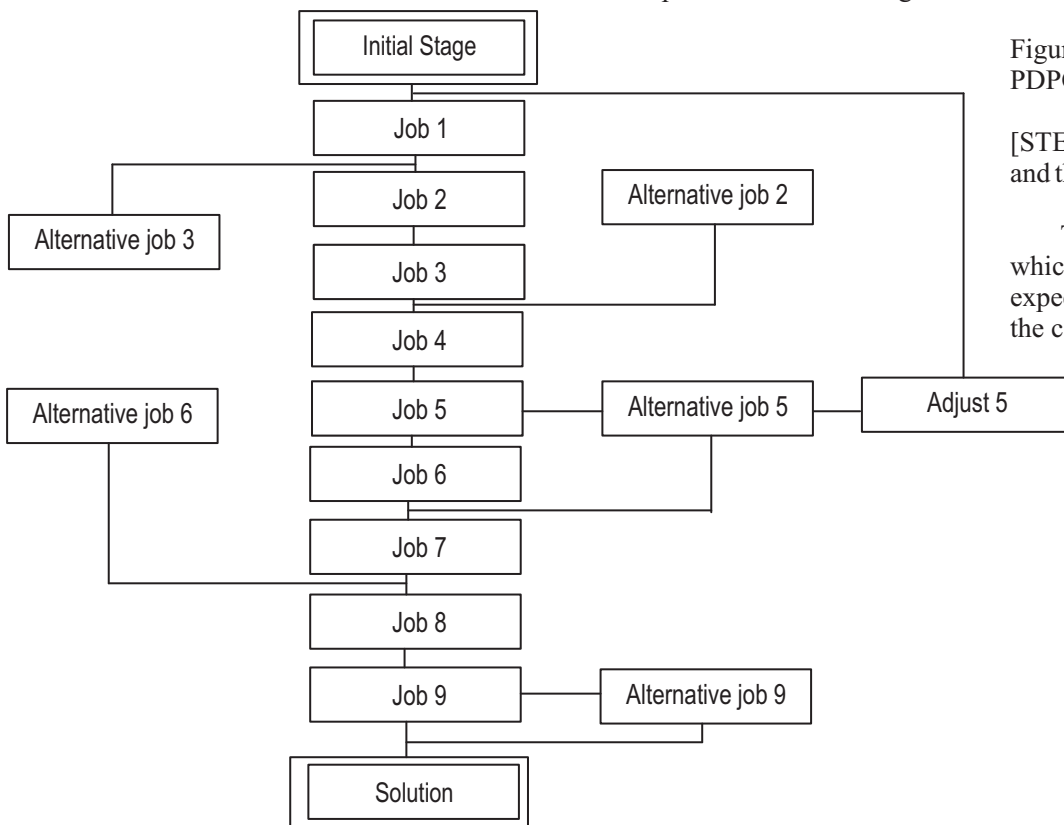


Figure A. Conceptual Scheme of PDPC

[STEP1] Decide the starting point and the target.

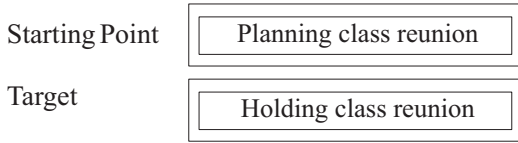
The starting point is a project which is difficult to implement or is expected to repeat trials and errors in the course of problem solving. Write it down in one sentence concretely.



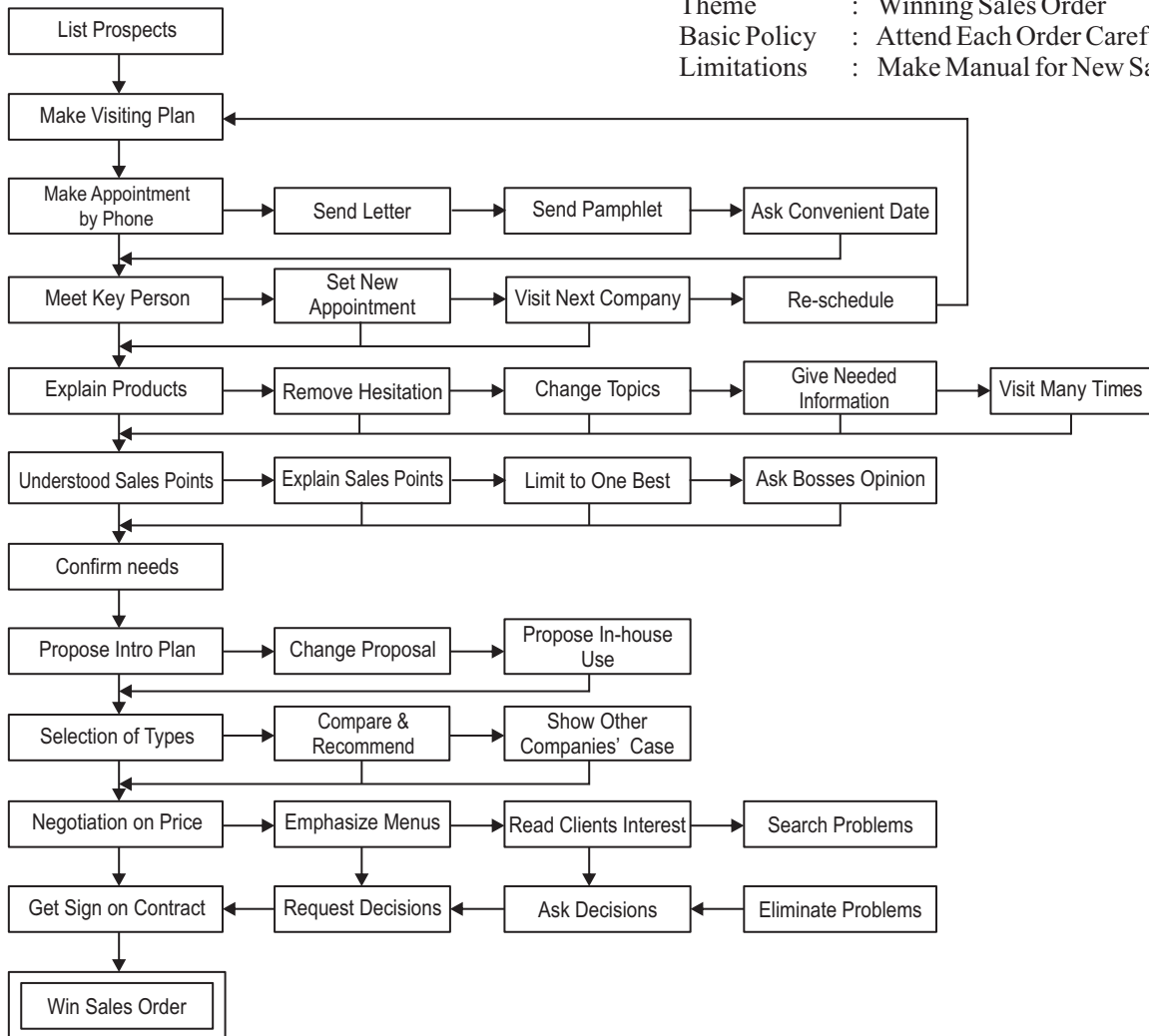
Special Feature

Note: The contents of jobs may be successive means or intermediate states on problem solving.

Example: Project of Holding a Reunion



Example:
 Theme : Winning Sales Order
 Basic Policy : Attend Each Order Carefully
 Limitations : Make Manual for New Salesperson



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