metals industry
TRENDS & EVENTS
MIRDC
September-December 2010 vol. 24 no. 3 - issn 1908-9988

MIRDC Names Dr. Agustin M. Fudolig as Deputy Executive Director

The MIRDC announces the appointment of Dr. Agustin M. Fudolig as MIRDC Deputy Executive Director which officially took effect on 13 September 2010. His appointment was endorsed by the MIRDC Governing Council and approved by DOST Secretary Mario G. Montejo.

As Deputy Executive Director, Dr. Fudolig is responsible for the planning, supervision, coordination and control of the activities of the divisions under the Technical Services group. He will play a major role in assisting the Executive Director in determining the direction and priorities of the Center, monitoring the operating units' performance, recommend programs and projects, and establish linkages with local and foreign institutes on matters related to the metals industry.

Doc Boy, as he is fondly called by his colleagues, is a native of Bohol and holds a Bachelor of Science degree in Metallurgical Engineering from the University of the Philippines, Diliman which he earned in 1986. He earned his Doctorate in Engineering from Tohuko University, Japan in 1996.

He started his career in 1986 as Research Metallurgist at the Benguet Corporation prior to joining MIRDC in 1989 as Supervising Metallurgist. He rose from the ranks and served as Officer in Charge to the Office of the Deputy Executive Director for Industry Development in 2006. He acts as representative of MIRDC to industry associations such as the Philippine Die and Mold Association (PDMA), the Philippine Iron and Steel Institute (PISI), and the Metal Engineering

Continuation on p3...

Rationalized MIRDC Offers More Focused Services

The Rationalization Plan of the Metals Industry Research and Development Center (MIRDC) has been approved by the Department of Budget and Management last June 22, 2010. Under the Plan, the MIRDC will continue to undertake activities pursuant to its mandate and would focus on the following functions aligned with the DOST's Major Final Outputs and the current strategic thrust of the government: Research and Development Services, Technology Transfer Services and Science and Technology (S&T) Services.

Specifically, the agency has identified the following strategic shifts in policy direction and activities to efficiently and effectively pursue its mandate:

- Strengthen the formulation of agency plans and programs to

Continuation on p9...

In this issue

From the Executive Director .....

Arthur Lucas D. Cruz, CESO IV
Executive Director

As the Center approches the last quarter of the year, we take pride in intensifying our efforts to make significant accomplishments. Noteworthy of these accomplishments are the publication of the 2010 Philippine Metal Products Directory, a comprehensive listing of metal firms in the Philippines with corresponding product lines and services; release of the Machine Shop Industry Study, a detailed account of the general profile of the sector and its over-all performance; development of machine for coco coir biologs, a promising technology for coir fibers useful for shorelines/river embankment stabilization and forest slopes rehabilitation; and garnering awards for the environment-friendly Non-Cyanide Electroplating Solution from the National Inventions Contest and Exhibits (NICE) and Chemrez Green Chemistry Award held in Cebu City. Furthermore, we initiated an additional column in the MIRDC Trends and Events to feature success stories of the Center's technology beneficiaries engaged in metals and engineering ventures. This new column aims to provide inspirations and encouragement to our existing and would-be-entrepreneurs and to acknowledge the contribution of our M&E partners in the development of our metals and engineering industry as well as the economic growth of the country. Our first featured story is VL Industech Corp., owned by Mr. Virgilio P. Lanzuela, who started his business from a backyard shop and now recognized as a leading machine-builder company. Mr. Lanzuela's story indeed serves as an inspiration to everyone.

While the Center continue to undertake activities pursuant to its mandate, functions and targets, the Center also started its transition to its new structure under the DBM-approved Rationalization Plan. MIRDC, which used to have eleven (11) organizational units with 343 plantilla positions is now downsized to seven (7) organizational units with 226 plantilla positions that will focus on the DOST's Major Final Outputs and current strategic thrust of the government, namely: research and development, technology transfer and science and technology services. Despite the reduced number in workforce, the Center will maintain its zealous efforts to serve and enhance the development of the metals, engineering and allied industries. The MIRDC's Management together with its potent workforce will work hand in hand to ensure that the Center's plans and programs, projects and services will be implemented for the advancement of the industry.

The year 2010 has been a fruitful year for the Center as we remarkably accomplished a number of programs and projects that benefited our customers as well as the metals and engineering industry as highlighted in our issues of the 2010 Trends and Events. We will do our best to make more astounding accomplishments for the years to come.

metals industry TRENDS & EVENTS

MIRDC Governing Council

Mario G. Montejo
Chairman

Members

Chita O. Angeles
Cirila S. Botor
Rudy B. Caña
Eduardo N. Chua Co Kiong
Arthur Lucas D. Cruz
Edwin G. Domingo
Rolando A. Jaurigue
Gerardo Roberto D. Sison*
Marcelo B. Villanueva**
Teodoro S. Solsoloy
Margarita R. Songco

Editorial Board

Arthur Lucas D. Cruz
Agustin M. Fudolig

Managing Editors

Danilo N. Pilar
Aurea T. Motas

Contributing Editor

Marlyn U. Ramones

Contributors

Eldina B. Pinca
Vilma A. Sia
Dolores D. Duque
Teresita C. Villoso
Marlyn U. Ramones
Rosalinda M. Cruz
Ma. Elena G. Gurimbao

Layout/Photography

Ronald L. Agustin

Printing

Ronald L. Agustin
Reynaldo M. Loreto, Jr.

Circulation

Teresita C. Ocampo
Josephine R. Esguerra

Metals Industry Trends and Events is a triply newsletter of the Metals Industry Research and Development Center (MIRDC), an agency of the Department of Science and Technology (DOST).

Editorial Office:

MIRDC Compound, General Santos Ave.
Bicutan, Taguig City, Philippines
P.O.Box 2449 MCPO, Makati
1299 M.M., Philippines

Tel. Nos.:
(MIRDC Trunklines) (632) 837-0431 to 38
(DOST Trunklines) (632) 837-2071 to 90
locals 2400 to 2407

Fax No.: (632) 837-0430/837-0764

Website: http://www.mirdc.dost.gov.ph

Printed in-house

** Until October 2010*
*** Starting December 2010*

PDMA Fetes New Trustees & Officers

The Philippine Die and Mold Association, Inc. (PDMA) recently announced its new Board of Trustees and Officers who will serve the Association for the calendar year 2011. Below were elected for the following seats:

President	- LOUIE T. FUSTER
Vice President	- ANGEL P. SERRA III
Treasurer	- VIRGILIO P. LANZUELA
Secretary	- FERNANDO NOBLE
Auditor	- PHILIP C. ANG
Trustees	- EDUARDO N. CHUA CO KIONG
	- AGUSTIN M. FUDOLIG
	- RUDY CAÑA
	- HECTOR D. MALONZO
	- JAIME L. DIAZ
	- JIMMY T. CHAN
	- GREGORIO A. OLIVEROS
	- MARGARET C. GO

Moreover, the chairmen of the following committees are:

Membership	- LOUIE T. FUSTER
Government Relations	- JAIME L. DIAZ
Ways and Means	- JIMMY T. CHAN

Meanwhile, past president Mr. Gregorio A. Oliveros, who is a member of the PDMA-Technological Resources Group, will chair the PDMAEC Steering Committee.

The incumbents are challenged to spearhead the Association's lined-up activities topped with the upcoming fifth biennial exhibition, PDMEX 2011. The event will be staged on 17-20 August 2011 at the World Trade Center Metro Manila, Sen. Gil Puyat Avenue, Pasay City.

Metal Products Directory Off the Press

Get your copy for only **PhP300.00** of the **2010 Philippine Metal Products Directory** at:

The MIRDC Library
MIRDC, Gen. Santos Avenue
Bicutan, Taguig City
Tel. 837-0431 to 38 loc. 462

The 2010 edition of the Philippine Metal Products Directory is a comprehensive listing of metal firms located in the Philippines. It consists of companies' email addresses and websites aside from the usual significant information such as office and plant addresses, contact persons, telephone numbers, facsimile numbers as well as product lines and services.

Get your copy now!

Dr. Agustin M. Fudolig...from cover page

Industry Foundation, Inc. (MEIFI). Dr. Fudolig is currently serving as member of the Professional Regulatory Board for Metallurgical Engineering under the Professional Regulations Commission.

Dr. Fudolig has participated in numerous local and foreign trainings. His background and understanding of science and research as well as his managerial experience will surely guide him in the formulation of the annual plans and programs for the Center as well as directing and coordinating the priority activities of the MIRDC.

MIRDC Celebrates Christmas

The MIRDC officials and employees merrily celebrated Christmas last 17 December 2010. The celebration includes giving loyalty awards, raffles, and games. It was highlighted by the divisions' presentations for "Kum Pasko-Medya" contest. Also, the Rondalla Group from the Children's Joy Foundation danced gracefully while they rendered a number of Christmas carols.

Welcoming new employees, everybody bonded together at 'salu-salo' lunch that strengthened the unity and camaraderie among employees. It was indeed a merry Christmas celebration, a whole day of fun, joy and excitement!

The FAD shows off their dancing prowess - they won first place in the division presentation

MIRDC Makes Available Survey Result on Machining Industry

The Metals Industry Research and Development Center conducted a study* on machining industry that covers the period 2007-2008. The primary data were gathered from 955 respondents in the nationwide survey, representing 71% of the 1,350 identified machine shops. It details the over-all performance of the sector and somehow presents the general profile of the machining sector in the country.

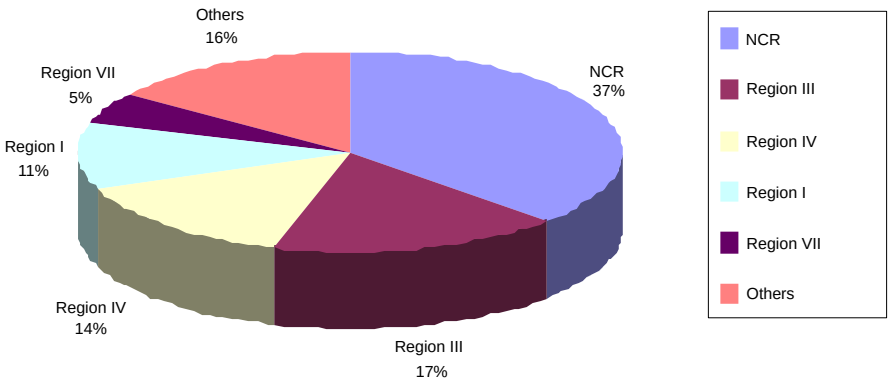
The survey reveals that the machining industry in the Philippines continues to survive in spite of the tremendous pressure the industry is facing. It is because of its important role in the manufacturing industry and other industries in general. SMEs operating a machine shop are managing to survive and are increasing in number because of specific customers' machining requirements. The survey shows that majority of the shops are engaged in repair and services, while others are involved in industrial parts fabrication, machine rebuilding, and engine reconditioning services. Most of the shops (355 shops or 37%) are located in the National Capital Region (NCR) and the rest are widely distributed in various regions of the country as shown in Figure 1.

Majority of the surveyed shops (about 98% or 933 shops) are Filipino-owned and only 2% or 22 shops are owned either by Japanese, American, Singaporean, Chinese and German nationals. About 16% or 156 shops have capitalization of less than Php100,000. There are 44% or 420 shops that have capitalization of Php100,001 to 1,000,000; while 21% or 200 shops have capitalization of Php1,000,001 to 10,000,000. Classified as single proprietorship numbered at 81% or 772 shops, 3% or 28 shops are partnerships, 15% or 144 shops are corporations, and 1% or 12 are government institutions. As reflected, majority or 67% of the shops were established from 1990 onwards and 2% have been in existence for over 50 years.

The surveyed machine shops employ a total of 9,431 personnel composing of 2,861 or 30% administrative personnel and 6,570 or 70% production personnel. The study presents the distribution of production personnel, mostly are male comprising of engineers, designers, draftsmen, assembly die maintenance, inspection/quality control technicians, machine operators, laborers, R&D staff, and others such as welders, fabricators, tool keepers, foremen, machine rebuilders, and molders. From the total production personnel, 4,596 have formal training and 1,974 are without formal training. Noticeably, micro shops are usually family enterprises where the owner and some family members are usually involved in the business operation. The study further reveals that 761 machine shops or 80 percent of the total respondent-shops employ one to ten production personnel, while eight percent or 78 shops have 11 to 20 production personnel as shown in Figure 2. There are eight shop-respondents which employ more than 50 production personnel and these were mostly multinational companies.

The data indicates that 514 or 54% of the surveyed machine shops

Figure 1. Geographical Distribution of Machine Shops



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, affinity diagrams and process decision program chart (PDPC) were tackled in the previous issues. Discussed below are matrix diagram and matrix data analysis.

MATRIX DIAGRAM

Definition: A technique for finding out the direction of the problem solving by examining a problem in its combination of the elements. It focuses on the interaction of two or more stratification and show the effect of combination on the intersection of the multiway table consisting of characteristics in row and column elements.

Application: Find out the measures
Search for the causes

The Matrix Diagram is useful to search for the priority problem and/or to find out the means to solve the problem.

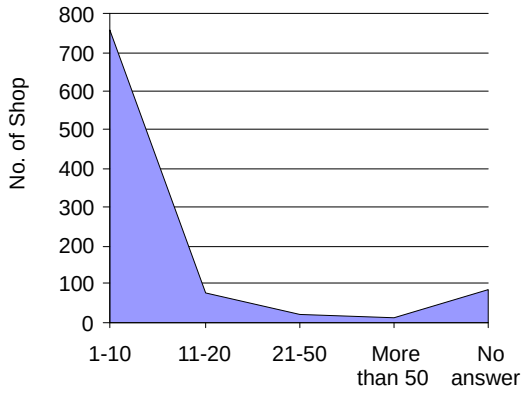
Steps: Theme Selection
Current status grasping
Analysis
Countermeasures

Actual fields of application:

- Setting the starting point of developing/improving activities of a system product
- Quality Deployment of material product like chemicals
- Strengthening QA system by relating assurance qualities and control functions
- Strengthening and improving quality appraisal system
- Searching for causes of defectives in production process
- Making product mix strategies relating markets and products

Continuation on p7...

Figure 2. Production Personnel in Machine Shops



cater to the machining requirements of the automotive/transport sector. This is followed by the industrial machinery sector with 297 or 31%, while the agricultural sector, 197 or 20% of the market. The metalworking industry and construction industry account for an average of 16% and 14%, respectively, of the services of the machining industry. Machine shops also serve the food processing, shipbuilding, mining, appliance, pressworking/stamping, tool and die making, power generation, electronics and chemical processing sectors.

The 955 shop-respondents utilize 3,153 lathes, 957 milling machines, 342 boring machines, 1,011 grinding machines and 1,210 drilling machines. There are also 132 shapers, 8 planers, and 14 power hacksaw/bandsaw. Advanced machine tools which are the computer-numerically controlled lathes, copy milling machines, wire-cut EDMs and machining centers totalled to 1,035 units, while general metal machines totalled to 6,673 units. Majority or 58% of the equipment utilized were purchased locally and 42% were acquired abroad. Numerous equipment are outdated as they are acquired either reconditioned or surplus, yet are still useful to most shops.

The major problems of the machining industry are the high price of raw materials, price competition, high cost of electricity, limited working capital and customs requirements that are difficult to comply with. In terms of business operation, repair is the most common services offered by 382 machine shops representing 40% of the total respondents. Shops engaged in combined jobbing and repair services accounted to 25% or 243 shops, while 14% or 132 shops are engaged in jobbing services only. As categorized, 97% or 924 shops are independent shops, while only 3% or 31 shops are captive. Captive shops are those owned by large manufacturing companies that exclusively serve their machining requirements, while independent shops are those that offer machining services to manufacturing firms.

Apparently, about 40% (381 shops) of the respondents are optimistic that business will flourish in the coming years. Some are planning to invest in new production process specifically in the development of spare parts of sea and land transport equipment, windmill to pump water and produce electricity, in automation as well as in the improvement of the design of agricultural equipment and other farm implements. However, 44% of the respondents do not have expansion plans and about 14% are uncertain to make expansion plans for the next two to five years. They are pessimistic expressing apprehension that business might deteriorate due to the unforeseeable downtrend of the economy. These shop owners are hoping that the government will extend assistance by giving subsidies and incentives to sustain existing businesses. Thus, it will encourage and attract foreign and local investors, likewise create more jobs and business opportunities in our country.

The 2009 Machine Shop Industry Study is now available at the MIRDC Library.

Lightweight solar panels that mimic wall-crawling ivy

Solar panels are a common sight on rooftops, but rare on vertical walls, which, being more or less parallel to the noonday sun, get less solar energy. Hoping to take advantage of this unused space, design start-up SMIT looked at how ivy plants nonetheless thrive on the sides of the buildings. The company's upcoming solar-energy system takes inspiration from the way a vine's many leaves individually maximize their sun exposure.

Solar ivy consists of thousands of four-ounce photovoltaic "leaves" that can be screwed into place on steel-mesh wall covering. Exactly where each leaf is affixed to the grid depends on a pre-installation analysis: SMIT's custom software calculates the angle that gathers the most light - in New York City, for instance, the leaves are tilted 49 degrees and rotated south - and a pattern that prevents the leaves from shading one another.

SMIT says 4,000 leaves will cover two three-story walls and generate 10 kilowatt-hours of power a day, a third of an average home's needs. It is taking preorders for next year and is in talks to launch a pilot this month on the even more angularly complex geodesic surface of the Montreal Biosphere.

Source: Popular Science, September 2010, p. 21

New series of core shooting machines

IMF, Luino, Italy has launched a new core shooting machine suitable for a wide range of requirements as it comes in versions of 20, 30, 50, 75 and 120 l. "Power Core" is equipped with touch screen PLC and an easy learning program allowing the operator to easily and intuitively interact with the machine, the mixer and the connected gassing unit. It can work in automatic or manual mode with the possibility of storing more than 100 recipes. All movements are hydraulically actuated and controlled by proportional valves that guarantee constantly smooth movements. The hydraulic power pack can be sized according to the cycle times.

The main structure can receive different types of working stations, e.g., one station with front exit, without clamps for horizontally-parted core boxes; one station with front exit and fixed clamps inside the machine for horizontally and vertically-parted core boxes; two stations rotating inside the machine with or without clamps assembled on board.

The lifting system of the core box cope can either be mechanically actuated and arranged on the gassing plate structure or hydraulically actuated and arranged outside the suit core box sizes.

In China, the machine is used for the production of wagon bogies. In this application, it produces core of more than 75 l with 4.5% sodium silicate and 175 mm shooting nozzle.

Source: Casting Plant & Technology 2+3/2010, p.66

"Power Core" shooting machine

Earthquake-proof buildings: A replaceable building-wide system to help hospitals, apartment buildings and office towers survive severe seismic shaking

For decades, the goal of seismic engineers has seemed straight forward: prevent building collapse. And so they add steel braces to a skyscraper's skeleton rebar to concrete shear walls. After absorbing the brunt of seismic shaking, however, the compromised structures often must be demolished. "The building, in a sense, sacrifices itself to save the occupants," says Gregory Deierlein, a Stanford University civil and environmental engineer. A team Deirlein led with Jerry Hajjar, a Northeastern University engineer, hopes to change designing a system that protects both people and the structures they live and work in.

Last fall, the engineers successfully tested a 26 foot-tall, three-story, steel-frame building outfitted with the new system, built atop the E-Defense shake table - the world's largest earthquake simulator - in Miki City, Japan.

Steel "fuses," not structural elements, absorbed the shock of an earthquake greater than magnitude 7, and cables pulled the building back into plumb once the shaking stopped.

After an earthquake of that scale, the deformed fuses could be replaced in about four days - while the building remained occupied. Jim Malley of the San Francisco firm Degenkolb Engineers calls the system the next step in the evolution of green building. As structural engineers, he says, "our sustainable design is the ability not to have to tear buildings down after earthquakes, but to use them for hundreds of years."

Source: Popular Mechanics, November 2010, p.70

Flexible forklift safely handles hot loads

The heavy duty Combilift 4-way forklift by Combilift Ltd, Monaghan, Ireland has led to safer handling procedures and opened up new business opportunities for Quality Heat Treatment Ltd (QHT), Rotherham, United Kingdom.

QHT specializes in furnace heat treatment for castings, forgings, fabrications and items for petrochemical industry. The company has to handle very heavy extremely hot and potentially hazardous loads around the site, in close proximity to personnel and other vehicles. The safe handling of these, with good driver visibility whatever the length of the load, is therefore a major issue. "We had a counterbalance forklift, but its maneuverability was very limited , and handling longer loads with it was going to be tricky if not plain dangerous," explains Engineering Director Paul Mattock. Soon he realized that the 4-way ability of the Combilift range would enable the company to take on much longer loads. "We had always shield away from treating 6.5 m long bars, but the 4-way ability of the Combilift now enables us to provide this service for our customers as we can easily get these through the 3 m wide doorway to the furnace." QHT chose a Combilift model from the larger, heavy duty range. The truck can carry 9 tonnes at 1 m load centre, so is well equipped to offload and handle the heaviest bars weighing up to 13.5 tonnes.

The Irish manufacturer customizes each truck according to specific requirements. QHT's Combilift has a longer than standard 2 m deck to accommodate the very bulky items delivered to the company. An attachment in the form of a spreader beam was also supplied, which comes into its own to support very long loads to prevent them from sagging when they come out of the furnace at a temperature of 1,000°C. Sideways travel is also of great benefit to enable loads to be moved from the furnace to the quenching area as quickly as possible.

Combilift current product range encompasses around 15 base models with capacities ranging from 2.5 to 25 tonnes, with LPG, diesel or electric power available. The trucks are designed to work both inside and out, on semi-rough terrain and in all weather conditions.

Source: Casting Plant & Technology 2+3/2010, p.67

The Combilift can handle very heavy and extremely hot castings

---

Seven New Management...from p5

- Clarification of relations among projects and necessary technologies
- Searching for application areas of current technologies and materials

The matrix diagram is effective in following cases:

1) In case where there are many objectives to be achieved, and many means corresponding to each of the objectives, the objectives and the means being interrelated in a very complex manner. This kind of complex interrelations can be summarized and understood easily by using a matrix diagram.

2) To formulate priority on "what measures to take" by summarizing the elements of the measures on three or more kinds of items such as items of defects, causes of defects, and the corresponding means to the causes.

The matrix diagram is used for assessing the effectiveness of higher-order means deployed by the Tree Diagram. It is also used for finding out the means to improve the production process by analyzing the interrelations between items of defects , causes, and the correcting means (refer to Fig.1).

The matrix diagram is widely used for clarifying the relations between required qualities and control characteristics in production process in a form of Quality – Function – Deployment (QFD).

Continuation on next issue

Figure 1. Conceptual Scheme of T-type Matrix

Symptom 1	◎	○		△				△		△				△
Symptom 2	◎	◎	◎				○		◎				△	
…			…	…	…	…	…	…	…	…	…	…	…	…
Symptom k		○	△		○				△			○			◎
Symptoms causes measures	cause 1	cause 2	…	…	…	…	…	…	…	…	…	…	…	…	cause m
Measures 1	◎	◎		○						△				△
Measures 2		◎	△				△	◎				○			
…			…	…	…	…	…	…	…	…	…	…	…	…	
Measures n					○			○	◎	△					

Gov't to Ban Cyanide in Jewelry Cleaning Fluids

The government is set to ban toxic substances, particularly cyanide, as ingredients for jewelry cleaning solutions.

Environment and Natural Resources Secretary Ramon Paje said, as early as 1997, Administrative Order 39 was issued to control the industrial importation, handling, use, distribution and disposal of cyanide and cyanide compounds.

The directive applies to all importers, distributors and industrial users on electroplating, mining and metallurgy, steel manufacturing, plastic production and jewelry-making, he added.

The Department of Environment and Natural Resources (DENR) and other agencies recently held a multi-sectoral consultative meeting with civil society and industry sector members who had been clamoring for stricter measures to control the use of silver jewelry cleaners found to contain cyanide.

During the meeting, it was agreed that the Food and Drug Administration will register jewelry cleaners that do not contain cyanide.

The Bureau of Trade Regulations and Consumer Protection will ban the sale of unlabeled items, particularly jewelry cleaners, and tap retailer or supermarket associations to do the same in their outlets.

The Bureau of Product Standards will also review the possibility of subjecting silver jewelry cleaners to Philippine Standard certification.

Paje said the agencies have also agreed to implement a stricter monitoring system for permits and clearances of facility owners, as well as the sale of cleaners that have not been duly tested, registered, labeled and certified cyanide-free.

"A ban on the use of such substances will also provide legal basis for confiscation, and help put a stop to illegal 'cottage operations' that proliferate their use," he said. "Labeling containers is vital in preventing risks from poisoning. Suppliers, distributors and retailers should also prescribe a safety data sheet informing the consumer about the contents, specifications and handling information of their products."

However, Paje said nothing beats exercising extra care in avoiding toxic chemicals.

"Accidents can be avoided if adults practice safety standards in their own homes, by properly storing, sealing and conspicuously labeling potentially harmful chemicals," he said. "They can also use safer alternative solutions for cleaning their jewelry. "

A boy died earlier this year after drinking from a bottle that contained cyanide-laced jewelry cleaner, according to the University of the Philippines-National Poison Management and Control Center.

The boy's death was among nine reported in the first half of 2010, of which five were pediatric cases, according to a report.

Cyanide and cyanide compounds are considered highly toxic to humans and aquatic life even at low concentrations. They can be fatal because when absorbed, they can deprive the body of oxygen.

Source: The Philippine Star, August 31, 2010

RP Set to Implement Law on Technological Transfer

The newly enacted law on technological transfer, which is expected to boost the marketability and commercialization of government-funded researches, is up for implementation anytime now as the Department of Science and Technology (DOST) and the Intellectual Property Office (IPO) finally inked its implementing rules and regulations.

The IRR, which emphasizes the need to transfer and commercialize technologies generated by research institutions using public funds, was signed by DOST Secretary Mario G. Montejo and IPO Director General Ricardo R. Blancaflor.

The Technology Transfer Act, signed into law on March 23 and which took effect last May 8, grants Intellectual Property ownership to research and development institutions that performed the research and development (R&D) using public funds. This paves the way for scientists to benefit from the results of public-funded researches. It allows scientists, state universities and colleges and research institutions to profit from research funded by taxpayers.

Commercialization, in this case, refers to the process of deriving income or profit from a technology, such as the creation of a spin-off company, or through licensing, or the sale of the technology and/or intellectual property rights.

The aim is for research institutions to effectively translate results of government-funded R&D into useful products and services that benefit the public. The successful transfer of government-funded R&D depends on the proper management of intellectual property.

"Intellectual Property" refers to intangible assets resulting from the creative work of an individual or organization.

The DOST, IPO and the Department of Trade and Industry are expected to issue guidelines on intellectual property valuation, commercialization and information sharing.

With the assistance of the DOST and the IPO, all research institutions are encouraged to establish Technology Licensing Offices (TLOs) and technology business development offices. The TLOs will assist scientists in applying for Intellectual Property.

The ownership of intellectual property rights (IPRs) from government-funded research will, in general, remain in the research institution that carried out the research.

The government may, however, assume ownership of IPRs in cases of national emergency or other circumstances of extreme urgency, or where the public interest requires, and in particular concerns for national security, nutrition, health or the development of other vital sectors of the national economy.

The IRR covers the management of intellectual property rights from research performed by government institutions as well as the commercialization of research results and the creation of spin-off companies.

Research institutions and government funding agencies are authorized to withhold from public disclosure, for a reasonable time, any information relating to the intellectual property to allow the institution to secure intellectual property protection.

Revenue and royalty which can be generated through technology transfer and commercialization of IP will be shared between the institution and researcher. Monetary revenues include royalty payments, proceeds from sale of technology, upfront technology transfer fees and dividends or sale from shares of stocks.

Researchers are allowed to commercialize government-funded research results by creating, owning, controlling, or managing a company or spin-off firm; to be governed by a Technology Transfer Protocol which every Research and Development Institution must have.

Income earned by a research and development institution from commercialization of publicly-funded R&D shall be constituted as a revolving fund for the use of the research institution to defray intellectual property management costs and expenses.

It can also be used to fund research and development, science and technology capability building, and technology transfer activities, including operation of technology licensing offices. No amount of said income will be used for payment of salaries and other allowances.

However, in case the income exceeds 10 percent of the research institution's annual budget, a minimum of 70 percent of the excess income shall be remitted to the Bureau of Treasury.

Source: Manila Bulletin. 7 September 2010

Rationalized MIRDC...from cover page

better serve the metals and engineering industries;

- Shift from short-series production to developmental production (applied research) with regard to S&T services covering metalworking and metalcasting;
- Decentralize to the DOST Regional Offices (ROs) III, VII, X and XI the operation and management of its Regional Metal Testing Centers to strengthen said ROs laboratory facilities;
- Optimize the utilization of its facilities and augment the production capacities of private firms by providing greater access through facility sharing or complementation;
- Provide relevant and responsive information that will enhance the competitive advantage of micro, small and medium enterprises;
- Scale down the provision of skills accreditation services to the metals and engineering industries in setting professional skills and competency standards for craftsmen and technicians, this being part of the primary mandate of the Technical Education and Skills Development Authority (TESDA);
- Scale down the acceptance of conventional machining from the industry;
- Transfer to the operating units the upkeep and maintenance of their respective equipment, machinery and other facilities; and
- Rationalize its financial and administrative functions.

As a result of the implementation of the rationalization plan, the existing eleven (11) organizational units with 343 plantilla positions was downsized to seven (7) organizational units with 226 plantilla positions. The rationalized organizational units are the Office of the Executive Director (OED) and Deputy Executive Directors (ODEDs); Planning and Management Division (PMD); Finance and Administrative Division (FAD); Materials and Process Research Division (MPRD); Prototyping Division (PD); Technology Diffusion Division (TDD); and Analysis and Testing Division (ATD).

Indeed, the MIRDC will continue to conduct R&D on metals and provide technology transfer services as well as S&T services to support the growth and global competitiveness of the metals, engineering, and allied industries in the country. The commitment to serve will not be diminished by these changes, but rather, will be further revitalized in accordance with the refocusing of the Center programs and activities.

MIRDC Develops Machine for Coco Coir Biologs

Coir fiber logs are biodegradable logs or biologs (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 coir biologs can be made in variety of lengths and densities to suit different applications. As the logs can absorb large amount 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 useful in catch basin protection, keeping unwanted pollutants from entering into sewer systems.

Locally-developed Machine for Coco Coir Biologs

For maximum utilization of coco coir, the MIRDC developed a manual machine for coco coir biologs 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 even by a novice operator. The manufacturing cost of the machine is approximately P40,000.00.

The machine for coco coir biologs is a promising technology for coir fiber since the Philippines is among the top coconut-producing countries. With this machine, it will not only generate employment for coco processors, but also increase the utilization of coconut coir for commercial purposes.

MIRDC's Non-Cyanide Electroplating Solution Receives Awards

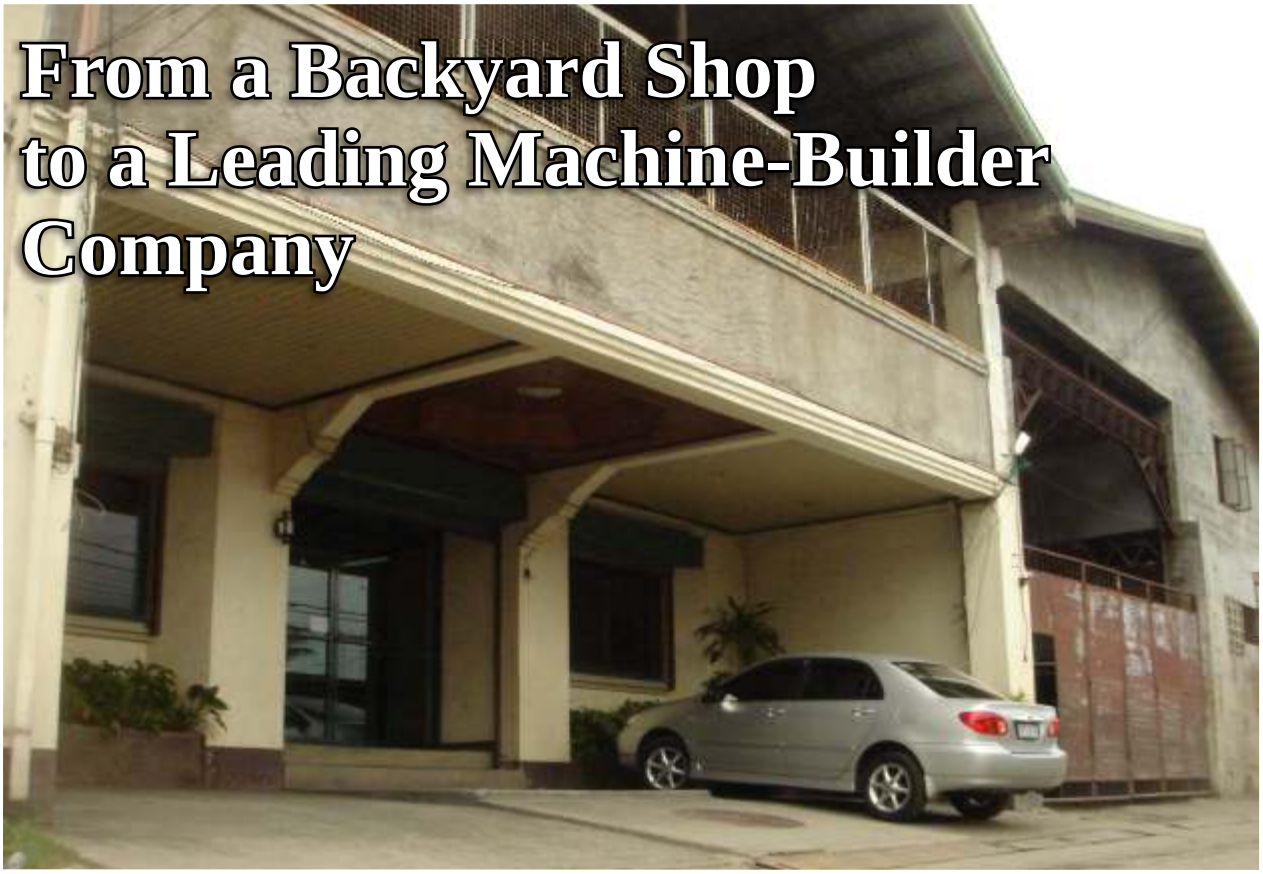
The Metals Industry Research and Development Center's Non-Cyanide Gold Electroplating solution garnered two awards during the recently concluded National Inventions Contest and Exhibit (NICE) held last November 24, 2010 at the SM Mega Trade Hall, Cebu City.

The non-cyanide gold plating solution was the second prize winner for the outstanding utility model and a recipient of Chemrez Green Chemistry Award. The Green Chemistry award is given to inventions of chemical products or processes that reduce or eliminate the use and generation of hazardous substances leading to efficient resource utilization and pollution prevention.

The Non-Cyanide Gold Electroplating solution is a process whereby the use of cyanide and cyanide compounds are eliminated. This leads to a cleaner and safer working environment, and also reduce hazards to human health.

The said utility model, authored by Ms. Maria Gracia M. Peralta, Engr. Jonathan Q. Puerto and Felix C. Banawa of MIRDC's Materials and Process Research Division (MPRD), is the NCR-Region III entry for the said national competition.

From a Backyard Shop to a Leading Machine-Builder Company



Established in 1981 as a backyard machine shop with an initial capital of less than P500,000.00, VL Industech Corporation (VLIC) is now worth over PhP15 million. The company is solely owned by Mr. Virgilio P. Lanzuela which he put up at their backyard in Maremil Subd., Landayan, San Pedro, Laguna. It was known as VL Machine Works and later registered as VL Engineering Works and finally renamed as VL Industech Corporation.

At the start, the company was engaged in the fabrication of various metal-based products like machine parts, tools and replacement components. After some time, VLIC sought assistance from the Metals Industry Research and Development Center (MIRDC) in the preparation and approval of a feasibility study in order to avail of financing assistance from the then Technology and Livelihood Resource Center (TLRC). VLIC was able to acquire conventional machines such as surface grinder, vertical milling machine, and delivery truck for its operation. With the infusion of additional investments, VLIC increased its production that resulted to the employment of additional personnel.

In the mid-1980s, VLIC won the bid awarded by Jacinto Steel Corporation to replicate its tri-wave rollforming machine, the first ever rollforming machine product of VLIC. The MIRDC has become part of this pioneering achievement by way of assisting VLIC for the measuring of rollers because at that time VLIC has very limited equipment. Two years after, VLIC was again awarded by Jacinto Steel Corporation for the replication of its ordinary corrugation machine. VLIC again sought MIRDC for consultation on how to augment its production and improve its processes. With the intervention of MIRDC, VLIC was given a break in the metal industry by specializing in the manufacture of rollforming machines. From thereon, other rollforming firms have begun sourcing their rollforming machine requirements from VLIC. Proudly, the firm earned the distinction of being a reliable and reputable supplier of rollforming machines and the leading rollforming machine manufacturer in the Philippines capturing 95% of the domestic market from Luzon to Mindanao.

After this success, VLIC started to venture into more sophisticated rollforming machines in different profiles particularly the tilespan. Performing the task would require VLIC some sophisticated equipment like CNC machine. Once again, the MIRDC provided VLIC its needed assistance for the mold and tool requirements. For two decades of its existence, VLIC has supplied over a hundred machines to more than 50 clients nationwide in major cities from Luzon, Visayas and Mindanao. While the customer base of VLIC has grown steadily, its broadening range of products have diversified into steel framing, wall partitioning, structural floor decking, roofing and cladding, door and shutters, and other related machineries.

VLIC also established linkages with professional industry associations. Currently, VLIC is an active member of the Philippine Die and Mold Association (PDMA) and the Metalworking Industry Association of the Philippines (MIAP). In February 2000, during the MIAP National Convention held in Cebu, VLIC was accorded as "Outstanding and Excellent Machine Builder" recognizing its exemplary achievements in the metal and engineering industry.

To explore more markets and enhance its competitive position, VLIC availed of the DOST Small Enterprise Technology Upgrading Program (SETUP) through the assistance and support of the MIRDC. This program enabled VLIC to purchase a CNC Vertical Milling Machine to supplement its production equipment and enhance its capability with a very flexible payment terms at zero interest. Hence, the company became one of the DOST Accredited Fabricators, serving the fabrication requirements of DOST Research and Development Institutes

(RDIs) such as MIRDC, Food and Nutrition Research Institute (FNRI), and Industrial Technology Development Institute (ITDI) as well as other government agencies like the Department of Agriculture (DAR), Philippine Chamber of Commerce, Inc. (PCCI), and Philippine Coconut Authority (PCA). Its projects with the DOST include fabrication of selected coco coir machines for MIRDC and fabrication and installation of Jatropha Oil Transesterification System for ITDI. On the other hand, MIRDC provided trainings/seminars to VLIC's staff in the field of chroming, tool and die, heat treatment, and plastic molding. Also, ITDI assisted VLIC on metal decking development particularly on the testing of tensile strength of the material and calibration of tensile for thread. Moreover, VLIC consistently enjoyed the facility-sharing services of the MIRDC to augment its production capability particularly in surface grinding, drilling, cylindrical grinding and metrology using CMM. It also benefited with the other services being offered by MIRDC like materials testing and chemical analysis, to name a few.

What's more for this year 2010? VLIC further availed of the DOST-Technology Application and Promotion Institute (TAPI)'s Working Capital Financing to mobilize its projects without downpayment and to make available three months working capital to ensure liquidity. This additional working capital from TAPI allowed VLIC to offer credit terms to clients and enable them to have a competitive advantage versus foreign suppliers/manufacturers.

VL Industech owner Mr. Lanzuela (rightmost) gives instruction to his employees

VLIC enjoys the mutually beneficial partnership with the government. It is likewise very much supportive of the government's national development agenda particularly in metals and engineering by being an active partner in many initiatives and projects, among which are: co-management of CNC Training for Skills Enhancement and Accreditation of the Technical Education and Skills Development Authority (TESDA) aimed at producing globally competitive skilled workers; National Cluster Management Team (NCMT) headed by former DOST Secretary Dr. Ceferino L. Follosco; and MIRDC series of dialogues including the recent one on developing a technology roadmap for selected metals and engineering (M&E) sectors. With almost 30 years experience in providing metal fabrication and services, VLIC has already earned recognition as a reputable company and a reliable partner of the government sector. VLIC is very grateful for the unwavering support of the government, especially the DOST-MIRDC, for their effective, timely, and responsive assistance and interventions.

The assistance acquired by the company from the DOST paves the way for VLIC to explore better opportunities in other markets and industries both local and foreign. As a consequence, the government also generates dollar savings from the non-importation of rollforming machines from other countries, such as Taiwan, China, Australia, and USA. In addition, the availability of local rollforming technology encouraged other companies to venture into rollforming business, thus creating a more competitive market for steel building producers. The increase in number of players correspondingly lowered the market prices benefiting the downstream consumers and the construction industry in general, not to mention the multiplier effect, in terms of employment generation in related sectors.

Today, VLIC's capitalization has reached over P15 million and has provided productive employment to at least 50 personnel. Its products and services have diversified from simple fabrication works into manufacture of complete line of rollforming machines and agricultural machineries. Its markets have gone beyond economic borders, as it initially exported products to Papua New Guinea, Japan and other European countries.

It only started as a backyard shop, now the VLIC has indeed transformed into one of the most reliable machine-builder serving the requirements of the different industries and contributing to the socio-economic agenda of the country.

Editorial Office:

MIRDC Compound
Gen. Santos Avenue
Bicutan, Taguig City
Philippines
P.O. Box 2449 MCPO
Makati 1299, M.M.,
Philippines

metals industry TRENDS & EVENTS
MIRDC
September-December 2010 vol. 24 no. 3 - issn 1908-9988