metals industry
TRENDS & EVENTS
MIRDC
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MIRDC Consistently Passes ISO Surveillance Audit

The third surveillance audit conducted by the Certification International Philippines, Inc. (CIPI) last February 10, 2011 reaffirms MIRDC's serious implementation of its Quality Management System (QMS). There were no reports of non-conformities demonstrating the effort exerted by MIRDC top management and personnel in implementing and sustaining the effectiveness of its QMS.

The CIPI auditors who conducted the audit were Ms. Emelinda P. Andres and Mr. Arnel I. Intatano. The scope of the audit includes: provision of services on research and development of equipment, products, processes and materials; industrial training, technical consultancy, technology transfer, and technical information dissemination; machining, heat treatment, casting, welding, and fabrication of metal products.

As a result of the approval of the Rationalization Plan of the MIRDC which took effect on June 22, 2010, changes were made on the MIRDC QMS considering the newly approved organizational structure.

The continued registration of MIRDC to ISO 9001: 2008 is an evidence that the Center is committed to achieve its vision to be globally competitive. With the dynamic support of the management, and the core values deeply imbibed in its workforce, the Center continuously maintains a QMS that is anchored on its commitment to provide the highest level of satisfaction to both its internal and external customers.

MIRDC Chooses its New Council Member

The MIRDC chooses Engr. Marcelo B. Villanueva as its new member of the Governing Council. He will succeed Mr. Gerardo Roberto D. Sison representing private sector from the allied industry.

The MIRDC is delighted to welcome Engr. Villanueva who was sworn in by DOST Secretary Mario G. Montejo on 22 February 2011 at the DOST Executive Lounge.

Engr. Villanueva earned his degree of Metallurgical Engineering from the University of the Philippines in 1969. He is currently the President and General Manager of Witco Construction & Development Corporation (WCDC), formerly Welding Inspection & Testing Corporation, which he founded in 1991 to provide testing and inspection services such as welding inspection, radiographic testing, ultrasonic testing, magnetic particle & dye penetrant testing, post-weld heat treatment, pressure testing, among others. Subsequently, he became a Certified Welding Inspector by the American Welding Society (AWS), a Non-Destructive Testing (NDT) Level III Examiner, Welding and NDT Consultant. Prior to WCDC, he joined Atlantic, Gulf & Pacific Co. of Manila, Inc. (AG&P) from 1981 to 1991.


Engr. Marcelo B. Villanueva

As new member of the MIRDC Governing Council, it is a homecoming for Engr. Villanueva as he started his professional career at MIRDC from 1971 to 1981. He was then Testing and Inspection Engineer and rose from the ranks to be the Materials Testing and Research Manager. His major accomplishments in MIRDC include planning, construction and start-up of the various Materials Testing Laboratories such as Chemical, Mechanical, Metallography, Non-Destructive Testing, Corrosion and Instrumentation.

Engr. Villanueva has been in the private practice and business for almost 30 years with remarkable achievements. Undeniably, he has excellent knowledge in the metal industry, fitting to his appointment as member of the MIRDC Governing Council.

In this issue

From the Executive Director .....

metals industry TRENDS & EVENTS MIRDC

Arthur Lucas D. Cruz, CESO IV
Executive Director

As MIRDC continues to undertake activities pursuant to its mandate, 2010 has been a remarkable year for MIRDC. Through the collective efforts of MIRDC's management and its potent workforce, the Center's plans and programs were effectively implemented, enabling the Center to achieve a 114% accomplishment for income generation totaling to Php 33.042M. Some of the notable highlights for 2010 include the formulation of the Technology Roadmaps of selected metalworking sectors, i.e., Machining and Fabrication, Tool and Die and Metalcasting; holding of the M&E Conference during the M&E Week and conferring the 1st M&E Industry Awards; launching of the Philippine Quality Award (PQA) at the Center; establishment of Equipment Manufacturing Cluster at the countryside; garnering awards for the Center's non-cyanide electroplating technology (first prize for the 8th Regional and National S&T Competitions in Industry and Energy - NCR Cluster, 2nd prize for Outstanding Utility Model and recipient of Chemrez Green Chemistry Award–National Inventions Contests and Exhibits); implementation of the MIRDC's techno-S&T caravan in the regions; development of prototype equipment through R&D activities such as coco-coir bio-log extrusion and defibering machines, an addition to the existing locally-developed coco-coir machines of the Center; and the successful transition of the Center to its new structure under the DBM-approved Rationalization Plan.

As we usher in the year 2011, we are aiming for another remarkable year with astounding accomplishments to the advantage of the metals and engineering industries of the country. This year's plans and programs are geared towards the advancement of the metalworking sectors we are mandated to assist. A deployment program of each directorate of the Center was held at the start of the year.

During the first quarter of the year, the Center continues to undertake activities for the development of a prototype Automated Guide-way Transit (AGT) System, a joint project of MIRDC with the Department of Science and Technology (DOST) and Philippine Council for Industry, Energy and Emerging Technology Research and Development (PCIEERD). The purpose of the project is to develop an environmentally sustainable technology alternative and economical transit system model at the Science Community Complex for technology demonstration.

Moreover, continued efforts are also undertaken on technology transfer activities of the Center through skills upgrading, product innovation and technical assistance to our beneficiaries. One of the highlights in this issue is the assistance endowed to Imok Agrarian Reform Communities (ARC) Women and Farmers' Multipurpose Cooperative of Calauan, Laguna through a set of loaned equipment (coir processing equipment) and training on the use of equipment to produce coir pots, coco ropes and geotextiles. This is a joint project of MIRDC with the Department of Agrarian Reform (DAR), purposely for employment generation, poverty alleviation, and disaster mitigation.

In addition, the Center now has completely developed a prototype Jatropha processing equipment that will surely help address the fuel crisis. To determine its capacity, the equipment was tested in Zamboanguita, Negros Oriental where abundant seeds of Jatropha are available. Through this developed technology, availability of alternative fuel will increase and dependency on crude oil will be reduced.

In this issue of Trends and Events, I am proud to present another success story of our beneficiary-firm under technology transfer services, the Egger Farm of Sta. Barbara, Iloilo. The firm, established in 1989 and owned and managed by Mr. Alfonso Lagman, Sr., is primarily engaged in agri-business producing eggs and poultry meat products until it diversified into a producer of wire-mesh poultry cages. The Center extended assistance in formulating the required non-cyanide zinc solution, commissioning of wire-mesh galvanizing plant, multi-spot resistance welding, among others. With the introduction of MIRDC technologies, the company was able to achieve substantial savings in its in-house requirements for poultry cages and, in the future supply the needs of its potential clients. The featured story is indeed a demonstration of the Center's invaluable support to our SMEs.

I am counting on MIRDC officers and staff that together we will work hand in hand to better serve the metals and engineering and allied industries and make this year a more fruitful year.

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MIRDC's Techno-S & T Caravan

In early 2010, MIRDC invited the industry to avail of the limited Techno-S & T Caravan Program. The project ran from May to July 2010. This is a "one-time" program intended to provide private organizations, companies and institutions in the M & E industries and related sectors with relevant MIRDC services such as calibration and testing, techno demo, and technology and training needs assessment (2TNA). Participating areas are Regions III, VII, X and XI.

The Calibration Caravan, an on-site calibration of various instruments/equipment which are not practically transportable due to size, weight, sensitivity and fragility, calibrated selected items of the participating companies/laboratories. The participating companies pay only calibration/testing fees which is based on a "first-come, first-serve basis" and agreed schedule.

The Techno-Demo showcased the matured technologies of the MIRDC free of charge, bringing these technologies closer to the M&E industries, particularly to the MSMEs located in the regions. Hands-on demonstration and investment package during technoforums and clinics were provided. The Techno Caravan included techno-demo on electroplating process, brushplating and wrought iron forming. The possible adoption of MIRDC technologies aimed to address the problems of our unemployed fellow Filipinos and potential investors in the regions and NCR to generate livelihood opportunities relating to the metals and engineering activities.

Through the Technology and Training Needs Assessment (TTNA), MIRDC provided assistance in evaluating the technology and training requirements of the metals and allied engineering firms in selected regions with emphasis on micro, small and medium scale enterprises. The Center also rendered technical assistance to various sectors of the M & E industries.

The result of the techno S & T Caravan Program will be used as an input by the Center in formulating its R & D programs and human resource development plan for the M&E industries.

Development of a Prototype Automated Guide-way Transit (AGT) System

Urban transport has chronically posed serious health and environmental threats with high level of air pollution being a part of daily life in many cities congested by motorized vehicles. With the increasing urbanization and motorization trends which generate these problems, it is clear that the Philippines needs to lessen its dependence on fossil-fueled transport and catalyze the entry and widespread development and use of more "environment friendly" transport technologies. At present, the public transport utility vehicles dominated by jeepneys and tricycles are petroleum fueled and, therefore, generate significant amount of Green House Gas (GHG) emissions.

Because of the rapid increase in the urban traffic that placed a heavy pressure on the available urban road infrastructure transport planning, traffic management, safety and public transport operations, the Metals Industry Research and Development Center (MIRDC) in cooperation with the Department of Science and Technology (DOST) and Philippine Council for Industry, Energy and Emerging Technology Research and Development (PCIEERD) is developing a Prototype Automated Guide-way Transit (AGT) System.

The proposed Prototype Automated Guide-way Transit (AGT) System will be the focal point for developing low cost mass transit for the country. This project is being implemented by DOST, PCIEERD, and MIRDC in cooperation with the industry and academe. The project aims to address the severe lack of environmentally sustainable technology alternatives by demonstrating the use of a localized AGT System. Specifically the project will develop and showcase the AGT system in the Science Community Complex of the DOST using Filipino ingenuity and capability in engineering and present the system as a model for adoption in other urban areas in the Philippines. It is fully aligned with the relevant objectives and priorities of the current Medium Term Philippine Development Plan (MTPDP), particularly on the provision of coherence among networks of institutions, resources, interactions, relationships, political mechanisms and instruments, and scientific and technological activities that define, promote, articulate and encourage technological innovation and diffusion processes. The project is also pursuant to the objectives and action agenda of the Philippine Agenda 21 (PA 21), the primary document that guides the Philippine Government in fulfilling its commitments under the historic Earth Summit of 1992. The PA 21 contains the necessary operational framework and action agenda that seek to provide better quality of life for all through sustainable development. It subscribes to the basic principle of generating, adopting, promoting and mainstreaming environment-friendly and cleaner technologies suited to Philippine conditions.

The DOST-MIRDC is in-charge of the following: 1) the coordination of all the design and development of guide-ways, testing and analysis to ensure the stability of tracks, stations and foundations; 2) the design and development of the rolling stock including the under chassis, air-

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New Set of Board for MIAP

The Metalworking Industries Association of the Philippines, Inc. (MIAP) recently elected its new set of Board members for the calendar year 2011-2012. Assisted by Dr. Agustin M. Fudolig, Deputy Executive Director of the Metals Industry Research and Development Center (MIRDC), the new Board members were affirmed during the 24th MIAP National Convention held on March 24-26, 2011 at the Iloilo Grand Hotel, Iloilo City.

The elected 11 Board of Trustees chose officers among themselves as follows:

President	- Virgilio F. Lanzuela
Executive V. President	- Dominador Lanoy
V. President-Luzon	- Charlie Policarpio
V. President-Visayas	- Inesitas L. Palermo
V. President-Mindanao	- Reynaldo Trinidad
Secretary	- Joseph Alan T. Abrenica
Treasurer	- Hector D. Malonzo
Auditor	- Edson Y. Mateo
Trustees	- Luis Miranda
	- Raymund Paras
	- Frenzel O. Yapyapan

Themed as "Strengthening the Metalworking Industry through Collaboration among Stakeholders," the MIAP convention was successfully organized by MIAP-Iloilo Chapter.

MIAP is a trade association of firms engaged in metalworking and related activities that was organized in 1978 to answer the need for a body than can represent the metalworking industry sector. It now has 16 chapters nationwide, e.g. Bohol, Butuan, Cagayan de Oro, Camarines Sur, Cordillera, Dagupan, Davao, General Santos, Iligan City, Iloilo City, Kidapawan, Metro Cebu, Metro Manila, Negros Occidental, Surigao, and Zamboanga.

Laguna Cooperative Benefits from MIRDC Coir Machines

The Imok Agrarian Reform Communities (ARC) Women and Farmers' Multipurpose Cooperative of Calauan, Laguna, is one of the many recipients of the coir processing technology of MIRDC, and is now a producer of high value coco coir products.

The cooperative, popularly called as "Imok," has a coir plant situated in Barangay Imok, Calauan, Laguna that employs around 40 households in the area, earning an average income of PhP 350/household per day. Through the initiative of the Philippine Fruit and Vegetable Industries, Inc. (Philfruits), the marketing arm of the Department of Agrarian Reform (DAR), the MIRDC loaned one (1) set of coir processing equipment to Imok for a period of three (3) months, renewable monthly, or until such time that it can acquire its own equipment. The set of equipment, i.e., 1 unit each of coco husk decorticator, coco fiber twining machine and coco fiber biolog machine, was delivered to Imok on October 28, 2010. Initial training on the use of equipment was conducted by MIRDC experts as part of its technical assistance.

Currently, the cooperative is capable to produce high value products, namely: coir pots, coco ropes, coco fiber gabion mattress and geotextiles. It supplied the geotextile and cocolog used by PITAD, Inc. in the slope stabilization and re-vegetation of Mt. Banahaw, which was eroded by typhoon "Basyang" on July 2010. Similarly, DENR-IVA sourced from Imok the coco fiber products used in its soil erosion control projects for Catanauan, Bondoc Peninsula. Also, last December 2010, Imok started supplying coco fibers to St. Dominique Multipurpose Cooperative's soil erosion control project for Catanauan river basin in Quezon.

Other potential markets for Imok's coir products are being eyed. A joint team of DAR and ACCOIR/Ventures Asia, Inc. explores the revival of DAR's Greenhouse project in Sta.Cruz, Laguna. The project will be needing an estimated 127,500 pieces of coco coir pots per month as part of the initial rehabilitation of the greenhouse nursery. The substantial requirement of coco pots for the project is expected to sustain Imok's operation. Likewise, market positioning is being sought by the team together with Imok for the supply of coco coir pots for the ABS-CBN's "Bayan ni Juan" housing project in Calauan, Laguna as well as the National Housing Authority's pabahay program in the same region.

The continuous training and skills upgrading of Imok workers, its product innovation, initiative and equipment improvement will not only expand its local end-users, but can even find its niche in the export market.

Imok's bold decision to venture into coir products is not only generating employment, but is contributing to the government's role in addressing the disaster mitigation needs of the country. Imok's success makes its name known to the market, but to MIRDC, it is a realization of its mandate of providing private sectors in the metals and engineering industry with critical and relevant technical assistance.


Twining


Biolog


Decorticator

Seven New Management Tools

Continuation from previous issue...

Types of the Matrix Diagrams

The Matrix diagram is classified from its shape as L-type matrix, T-type, Y-type, X-type, and others.

L-type

Most frequently used type of matrix diagram and show the relationship of two elements deploying in the shape of L, and is a basic matrix to form other type of matrices. It is important to select the items appropriate for the analysis.

T-type

T-type matrix is a combination of two L-type matrix diagrams with a common element on one dimension. In such a matrix, the relations, for example, are between symptoms of failures and their causes, or of causes and counter measures can be shown on one diagram.

Y-type

Y-type matrix is a combination of three L-type diagrams of A & B, B & C, and C & A, to form a matrix in a shape of the letter Y.

X-type

X-type matrix diagram is a combination of four L-type matrix diagrams of A & B, B & C, C & D, D & A, to form a matrix in a shape of the letter X.

Uses are limited but if appropriately used it shows its effectiveness.

Sample :Fig.2. Matrix Diagram Relating Tools to Applications

Tool / Application	Relations Diagram	Affinity Diagram	Tree Diagram	Matrix Diagram	Matrix Data Analysis	PDPC	Arrow Diagram	Total	Frequency 20 40 60
QA: New Product Dev't., Design Imprvt., Etc.	3	1	11	47	0	5	6	75	26.40%
QA: Counter Measures Against Claims	9	0	23	25	1	1	2	63	22.20%
QA:Safety and Reliability Imprvt	0	0	3	7	0	0	0	10	3.50%
QA:	2	0	3	2	0	0	0	7	2.5%
QA: Process	1	0	8	13	2	1	2	27	9.50%
QA: Other	1	2	4	13	0	0	1	22	7.7%
Policy	3	0	1	2	0	1	1	8	2.8%
TQC Promotion	1	2	1	7	0	0	0	12	4.2%
Energy-Saving Campaigns	2	0	6	4	0	0	1	14	4.9%
QC Circles	2	0	0	1	0	0	0	3	1.1%
Other	6	0	9	18	1	0	4	43	15.2%

MATRIX DATA ANALYSIS (Multivariate Analysis)

A Matrix data analysis is a technique obtaining a good perspective of a problem by analyzing a large amount of data. This is the only technique among the 7 that deals with numerical data and computation is done by a computation. This technique figures out the shape of the problem. Other 6 tools in N7 deal with descriptive data and are used to arrange the chaos of descriptive data in order. Matrix data analysis is used to put the chaos of a large quantity of numerical data in a matrix form in order.

Actual Fields of Application:
- Analysis of processes where factors are complexly related
- Analysis of many factors of defectives with many data
- Grasping required quality from market research data
- Systematic classification of sense characteristics
- Analysis of curve response data (Response surface)

This technique in actual application requires huge amount of computation and is not suited to manual calculation.

Continuation on p9...

MIRDC Emergency Preparedness

Safety is also a prime concern of the MIRDC. Summer is here again and fire, earthquake, and tsunami may hit our work place anytime. The Center has established several plans that should be observed in case emergencies arise. It formed an Emergency Preparedness and Response Group (EPRG).

Headed by Engr. Pablo Q. Acuin and Engr. Florante A. Catalan, the Group initiated a fire drill on 22 March 2011. The fire brigade together with the first aide brigade assisted the conduct of the fire drill. Likewise, an awareness seminar on earthquake was also conducted. The seminar equipped employees about tips for earthquake safety. Such precautions are very essential in ensuring preparedness of employees, a measure that is capable of saving lives and properties and preventing chaos as well as stampedes that will cause additional injuries and fatalities when emergencies occur.

Our safety and those of others in the vicinity depends on our ability to execute the correct emergency preparedness. We should never be caught unaware and should be ready at all times not only to survive, but also, to be of assistance to others who need help.

E-waste recycling can trigger new 'Gold Rush'

Electrical waste recycling could be part of new environment 'Gold Rush', according to a report published by Aachen University.

Gold recovered properly from electrical waste has purity and quality similar to virgin gold, potentially saving massive amounts of energy and reducing carbon dioxide emissions. Researchers from the German University found that a tonne of waste circuit boards could yield 400 grams of gold - 80 times more than the same quantity of gold ore would yield.

The research was commissioned to celebrate the achievement of the European Recycling Platform (ERP) in recycling 1 million tonnes of electrical waste. The data showed that saving 9 billion kwh of energy is enough to power 1.5 million homes for a year. The production of 1 kg. of virgin gold releases the equivalent of 19,000 tonnes of carbon dioxide, it is claimed.

Although only around 20% of small electrical items are currently being recycled, the remaining 80% is not necessarily being binned but may be lurking in drawers and cupboards because people do not want to throw them away and are unsure where to take them.

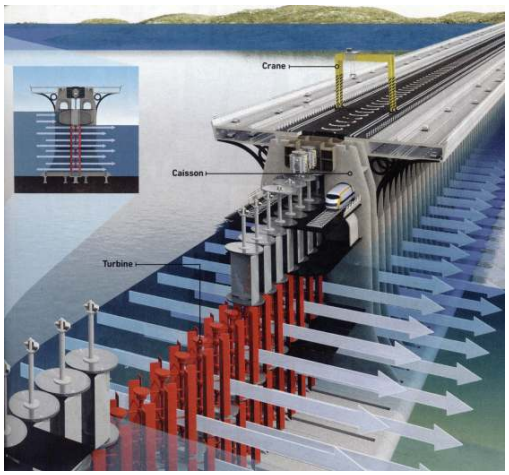
In electronic goods, nearly half (47%) of the recovered materials are metals: 8 tonnes of gold, 65 tonnes of silver, 40,000 tonnes of copper and 390,000 tonnes of steel have been recovered from the 1 million tonnes of waste electronic and electrical equipment by the ERP. The platform is the only pan-European compliance scheme and was set up in 2002 by Electrolux, HP, P&G and Sony in response to the introduction of the EU's WEEE directive.

Source: Recycling International, December 2010, p.8

Bridge over turbined water

The world's oceans could generate enough electricity in five days to power every home in the U.S. for a year. The question is, how do we harness the motion of the ocean efficiently? One common approach involves sprawling underwater turbines, but these windmill-like devices capture only about 35 percent of the kinetic energy in currents, because most of the water simply skirts around the propellers. Now the Canadian company Blue Energy has a way to capture much of that lost energy: Stack the turbines beneath a bridge. When placed across an estuary, Blue Energy turbine system causes a slight damming effect that accelerates water as it passes out to sea, generating four times as much power per turbine and conventional tidal turbine. "More speed equals more power," says Jon Ellison, the company's executive vice president.

Blue Energy's first demo project, a causeway retrofit in Scotland, will by 2013 generate 10 megawatts- enough to power about 8,000 homes. "You get two infrastructures for the price of one," says company founder Martin Burger.



Source: Popular Science, January 2011, p.32

Removing bottle labels prior to recycling

Available in capacities of 4,500 or 8,000 kg per hour, the label remover, from German-based Herbold Meckesheim, is designed to be used at recycling plants for the removal of wrap-around PVC labels from PET bottles.

Until now, says its developer, the process of removing and separating these labels has been impossible at the pre-wash stage of bottle recycling, as well as difficult and costly at subsequent stages. With the new machine, however, the labels are removed in a single step early in the process and without the expense of generating extra steam. This new development also separates bottles that are stuck together, thereby reducing costs associated with manual separation. By taking off almost all wrap-around labels early in the recycling process, the label remover also saves money at the size-reduction stage because cutting blades will stay sharp longer given that they will not become dulled by the remains of labels stuck to bottles.

The removal of labels and adhesives from bottles are accomplished via friction between exchangeable rip-off elements bolted to the rotor and exchangeable pins fitted to stator elements. All rip-off elements and pins are made of special wear-resistant steel. The design of the chamber is said to ensure even loads and dwell times as bottles are advanced by the rotor. The chamber has no space that would allow bottles to pass through the machine without undergoing full frictional contact. Likewise, there are no surfaces to constrict material flow, thus reducing the possibility of damage to bottles.

Source: Recycling International, January/February 2011, p. 15

CentriCut granulators for plastics and rubber

Swiss recycling technology developer Nuga AG has reviewed its range of low-wear granulators for grinding plastics and rubber.

Available as stand-alone or online systems, the CentriCut series of plastic recycling systems extends from the Type 33r model for small-and-medium sized parts, sprues and hollow items which offers a maximum hourly throughput of 2500 kg. A major focus of development activity at the Balgach-based firm has been wear protection. By applying the results of in-house wear tests to the production process, it has been possible to achieve a substantial extension to the service life of typical wear parts across the entire range of CentriCut granulators,according to the company. Benefits include: very low maintenance requirements, long uninterrupted uptimes, and cost reduction.

"Innovative" machines for grinding rubber have successfully completed their test phase at Nuga. These do not require a cooling agent and so bring significant cost savings, the company explains.

The Swiss company has supplied the machines around the world, both as central granulators and as secondary granulators on two-stage shredding and granulating lines for all types of plastics, as well as for special applications such as the fine-grinding of fibers or rubber.

Source: Recycling International, January/February 2011, p.15

Protector removes metal contaminants from PET

More than 80% of Germany's PET processors- as well as over 60% of their counterparts across Europe are claiming to be using separators from S + S for the removal of contaminants.
And at the K2010 show in Germany, the Hamburg-based sorting technology firm presented its latest solutions to the problem of protecting high-performance injection molds for preforms or caps and closures against metal contaminants.

For processing temperatures of up to 200°C, the Protector-XHT metal separator is installed directly at the inlet of the injection molding machine or after the drier, thereby inspecting all feed materials at the final control point. S + S has also developed the Protector- HR metal separator for high-performance molds such as bottle caps. These types of application require high scanning sensitivity to protect the delicate hot-runner systems.

Source: Recycling International, December 2010, p.15

Rhodia process for recovering rare earths from light bulbs

Rhodia, a world leader in rare earth-based chemicals, has developed a means of recovering and separating rare earths contained in used, low energy light bulbs. The result of a range of research programmes conducted by Rhodia over several years on the life cycle of its products, this process for recycling luminescent powders opens up fresh environmental and economic prospects at a pan European level, according to the French firm.

Once collected and sorted, used light bulbs are currently processed by specialist companies with a view to recycling the various components, including glass, metal, plastics and mercury. The luminescent powders, containing high concentrations of rare earths, have been consigned to landfills but will be recycled in the future at Rhodia's Saint-Fons and La Rochelle plants in France. The latter facility already has acknowledged expertise in rare-earth separation.

"At a time when global demand for rare earths is experiencing growth rates above 6% per year, this initiative opens the way to new sources of rare earths perfectly tailored to market needs," states Fereric Carencotte, Industrial Director of Rhodia Rare Earth Systems and the man responsible for the recycling projects. "This process should be operational by the first quarter of 2012 and will allow 25 to 35 jobs directly related to this activity to be created within the group," he added.

Light bulbs contain several rare earths, including terbium, yttrium, europium, gadolinium, lanthanum and cerium.

Source: Recycling International, March 2011, p.19

World's Top 10 Steel-Producing Country

(x millions of tonnes)

Rank	Country	2010	2009	% Change
1	China	626.7	573.6	9.3
2	Japan	109.6	87.5	25.2
3	US	80.6	58.2	38.5
4	Russia	67.0	60.0	11.7
5	India	66.8	62.8	6.4
6	South Korea	58.5	48.6	20.3
7	Germany	43.8	32.7	34.1
8	Ukraine	33.6	29.9	12.4
9	Brazil	32.8	26.5	23.8
10	Turkey	29.0	25.3	14.6

Steel Production by Region 2008-2010 (x millions of tonnes)

RANK	REGION	2010	2009	2008
1	Asia	897.9	804.9	771
2	Europe	314.9	265.5	342.2
3	North America	111.8	82.4	124.5
4	South America	43.8	37.8	47.4
5	Middle East	19.6	17.7	16.6
6	Africa	17.5	15.2	17.0
7	Australia/New Zealand	8.1	6.0	8.4
Totals		1.414	1.229	1.327

Source: worldsteel.org

BOI Okays Investment Priorities Plan for 2011; 13 Priority Sectors Included

The Board of Investments (BOI) has approved the 2011 Investment Priorities Plan comprising of 13 priority sectors from the original 11 sectors to include motor vehicles/transportation and mining on top of agriculture/agribusiness and fishery, creative industries, shipbuilding, mass housing, energy, infrastructure, research and development, green projects, tourism, strategic projects and projects under the Public-Private Partnership (PPP) program.

"The Board has approved the IPP, which would be ready for submission to Malacanang anytime for President Aquino's signature," BOI managing head Cristino L. Panlilio told reporters.

Panlilio said the BOI has decided to include motor vehicles/transportation and mining in the priority list to show their importance in the economic contribution of the country.

The motor vehicle was originally listed under the Strategic Project, but industry players have complained because projects under this particular heading have stringent requirements

including an investment of $300 million, employment of 1,000 workers or the introduction of new technology to avail of BOI incentives.

Panlilio said the motor vehicle/transportation list will have a separate implementing rules and regulations that would be in line with the requirements under the Motor Vehicle Development Program (MVDP).

In including this sector in the priority list, Panlilio said the BOI has recognized that this entire sector accounts for 10 percent of the country's GDP or at least P1 trillion equivalent.

"This sector is both manufacturing and service and if you cull out its economic contribution the importance of this sector will show. Because of that fact, we have to attend closely to this industry.

Panlilio cited the industry's components include the 1.5 million jeepneys and the 1.5 million drivers, the 200,000 buses, the support industries like auto parts and second hand motor vehicle sector.

"We have to attend to the continuing viability of the whole sector and the development of its exports component especially with the effectivity of the free trade regime in ASEAN and other free trade agreements that we are forging with other countries whether on bilateral or regional level," he said.

On mining, Panlilio said that this sector would be included both in the priority list as well as under the mandatory listing because it has specific law,The Mining Act.

Panlilio said that the listing of mining under the priority list is meant to extend incentives to mining projects that are not granted under the Mining Act.

"We have to give more importance to the development of the countryside, thus we are listing mining as a priority sector," Panlilio said.

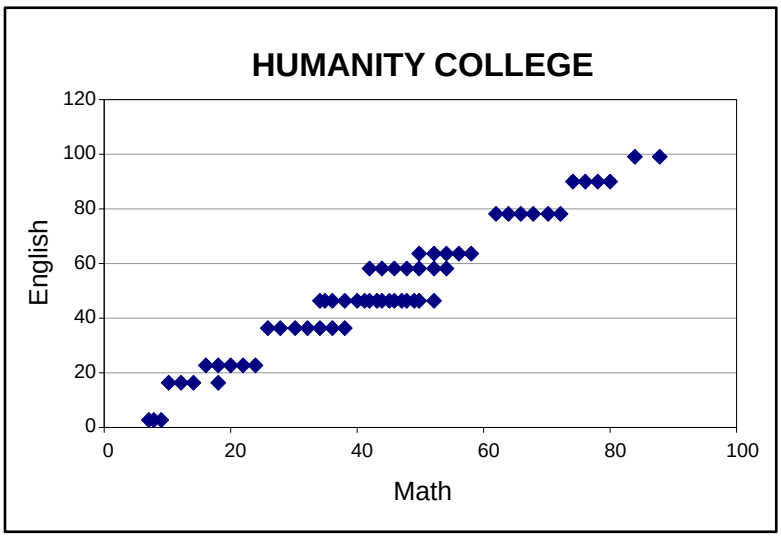
Source: Manila Bulletin, February 15, 2011

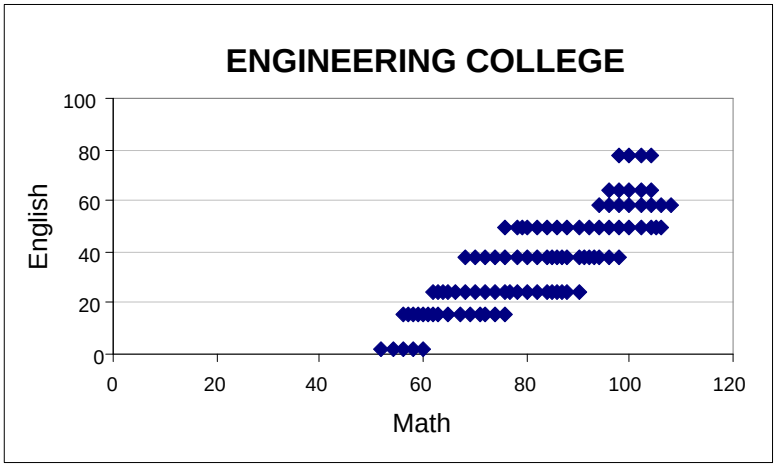
Seven New Management...from p5

Example 1:

A university is trying to establish a fair evaluation of the results of entrance examination from overall capability. There are two colleges: humanity college which gathers students who have equal capabilities to English & Math, and the other, engineering college where the students generally are good at Math and Science, but with different degree of capabilities as regard to English.

The scatter diagrams for two colleges are: (See diagram at right)





In the humanity college, the points on English and Math scatter almost the same range, but in the engineering college, the points in English differ significantly. In an Engineering College, pass or fail cannot be decided by simply adding the two exams, because the students with Math ability will be denied entrance to an Engineering College. To a problem like this, data is standardized first using the formula:

U=(x-u)/o

where U - standardization
x - original data
u - average of original data
o - standard deviation of original data

Equipment to Produce Bio-Diesel Eases Fuel Shortage

De-sheller

Filter Press

Boiler/Steamer

The Philippines is one of the most affected countries in terms of energy crisis caused by the on-going chaos in the oil producing countries in the Middle East.

Just in time, the Metals Industry Research and Development Center (MIRDC) developed and prototyped a complete line of Jatropha processing equipment which eases fuel crisis.

This equipment consisted of Jatropha pod desheller, oil expeller , boiler or steamer and crude oil filter press. The sheller separates Jatropha seeds from the pods and other foreign materials prior to oil extraction. The oil expeller mechanically extracts the oil by squeezing and pressing processes. The boiler pre-heats the seeds prior to expelling or pressing, while the filter press removes "foots" or residue from the expelled oil to produce clean crude Jatropha oil.

The prototype equipment was completed through a joint project of MIRDC with the PNOC-Alternative Fuels Corporation (PAFC), Department of Science and Technology (DOST), Industrial Technology and Development Institute (ITDI) and Philippine Council for Industry, Energy and Emerging Technology Research and Development (PCIEERD) entitled "Pilot Production and Testing of Bio-diesel from Jatropha Curcas - Task 3: Prototype Development & Local Fabrication of Jatropha Oil & JME Processing Equipment."

MIRDC has undertaken key steps on the development of Jatropha processing equipment - manual and mechanized variants through pod and seed characterization, design and simulation of test models. Using the test results along with the imported set of processing equipment as benchmark, the R&D activity produced a set of locally-developed design and improved Jatropha processing line of equipment that can be replicated for community livelihood or large scale application.

Oil Expeller

To determine its capacity, the equipment were tested in Zamboanguita, Negros Oriental where abundant seeds of Jatropha are available.

Through the commercialization of this prototype equipment, availability of bio-diesel as automotive alternative fuel will increase and the country's dependency on crude oil will be reduced.

Development of a Prototype...from p3

conditioning, suspension, and all others that will be essential to the functionality of the coach; and 3) the design and development of electrical and controls specifically the installation of power supply and communication systems. The AGT system must be able to withstand intensity 9.5 to 10 earthquake.

The first-ever Filipino-designed electric-powered automated guide way transit system is commonly called monorail.

The monorail is a type of vehicle on top of the runway with single car, with a capacity of 60 to 80 passengers. The vehicle dimension is 12 meters long, vehicle weight (empty) is approximately 3,000 kgs, and the guide-way is elevated with a special provision for evacuating passengers. The budget source is under the DOST-GIA Project with a total amount of PhP 58,226,728.80 for the first year. The project duration is approximately eighteen (18) months.

The said monorail will be ready to roll down on a 150-meter test track within the Department of Science and Technology (DOST) complex in Bicutan soon.

Source: Manila Bulletin, February 9, 2010

Egger Farm Hatches More from the Technology Infused by MIRDC


Assembled Galvanized Mesh-Wire Poultry Cages now produced by the Project

"With the infused technology by the MIRDC, we were able to generate savings of more than a million!" blissfully said by Mr. Alfonso Lagman, Sr., the owner and manager of Egger Farm.

Located in Sta. Barbara, Iloilo, the Egger Farm is engaged primarily in agri-business, producing eggs and poultry meat products. It is a major poultry operator in the province of Iloilo with a total bird population of 80,000 egg layers and also accounted for about a third of the supply of eggs in the entire Panay islands.

Ever since it was established in 1989, Mr. Lagman uses highly corroded mesh-wire cages. His method of using metal primer paint to prevent corrosion only lasts for three months.

Until in 2008, the MIRDC consultants inspected samples of highly corroded mesh-wire cage component. Aimed at helping the company through use of suitable technology, they introduced to Mr. Lagman the non-cyanide electro-galvanizing process, a technology that enhances the anti-corrosion property of the poultry cages to prolong the economic life of the cages. They further explained to Mr. Lagman about the advantage and viability of manufacturing wire-mesh cages combined with technology on multi-spot resistance welding.

With the increasing demand for egg being the cheapest source of protein, Mr. Lagman deemed it timely to pursue his farm's expansion program whereby the need for support facility in cage production has become necessary. Convinced in 2009, Mr. Lagman decided to venture into metalworking industry. He applied for the Innovation System Support Fund (ISSF) under DOST's Small Enterprises Technology Upgrading Program (SETUP). The project involves the establishment of a manufacturing plant of wire-mesh poultry cages. The plant will employ combination of technologies on Multi-Spot Resistance Welding to produce a wire mesh and Electro-Galvanizing that enhances the anti-corrosion property of the poultry cages so as to prolong their economic life. The wire-mesh galvanizing plant will be located at the Egger Farm-Sta. Barbara Hills in Brgy. Balibagan, Sta. Barbara, Iloilo inside the poultry farm.

The MIRDC provided assistance in the formulation of non-cyanide zinc solution, plant design and layout, and commissioning of the wire-mesh galvanizing plant for the extension of facilities of Egger Farm Galvanizing plant in Sta. Barbara, Iloilo. Also, the firm was able to acquire the equipment for its expansion through the approval of its project proposal for SETUP funding amounting to PhP 996,000.00.

The project is intended to be self-sustaining. For the initial three-year period, the project will be supplying its parent company, the Egger Farm, its internal requirement for wire mesh poultry cages until it completely refurbished all its cages by adopting the three-tier design. While many new players have lately ventured into poultry business, there is however no commercial wire mesh cage producer and electro-galvanizing shop in Iloilo province that can supply the needs of this sector. These are the potential clients that this project is looking forward to cater to as soon as the Egger Farm has met its requirement.

With the introduction of DOST-MIRDC technology and continuous technical assistance, Mr. Lagman is thrilled with the results derived from the project. On non-cyanide electro-galvanizing process, the corrosion resistance of wire-mesh poultry cages was improved. The company was able to significantly extend the economic life of its cages by up to one stock-cycle or 18 months. As of December 2010, the company has produced around 2,400 set of cages (stocking capacity of 20 birds per cage) with an estimated prevailing commercial value of PhP 2,800,000 at PhP 2,000 per cage (if purchased from private sector). Instead of outsourcing from suppliers, the in-house production of cages matters a lot. The in-house manufacturing cost of the company is only PhP 1,200 per cage or a total savings of PhP 1,920,000 equivalent to 40% less of the supposed commercial


MIRDC consultant for Electroplating conducts trial run of the Electro Galvanizing facility set up for Egger Farm.

value. The company has an in-house requirement of about 5,000 cages every two years assuming it will not expand its bird population.

Moreso, the company was established with initial capitalization of P4 million and 14 employees. But through the years the farm has expanded its operation and presently the company has 41 employees and total assets of PhP 6.63 million. Significant to its success, Egger Farm generated savings of PhP 1,074,150.00 for one and a half years of its operation upon the introduction of the MIRDC technology.

Multi-Spot Welding Machine being test ran by MIRDC consultant for Egger Farm.

MIRDC Consultant explains to Mr. Alfonso Lagman, owner of Egger Farm, the advantage & viability of the in-house manufacture of the wire-mesh cage; and also explains the requirements of using Multi-tip Spot Welding Machine and Electro Galvanizing if these are to be established onsite.

Extent of corrosion is clearly visible after only three months of deployment. The method of using metal primer paint proves ineffective in addressing corrosion in a poultry environment.

Bottom component of the cage being inspected for quality by MIRDC Extension Officer.

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