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# NETCASTER

SPRING EDITION 2011, Issue 24

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**Buyers/Designers**  
of metal castings

*buyCASTINGS cuts costs and adds value*

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**Foundries**

*Reduce cost, access new markets*

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**Suppliers**

*to foundries*  
*buyCASTINGS expands markets*

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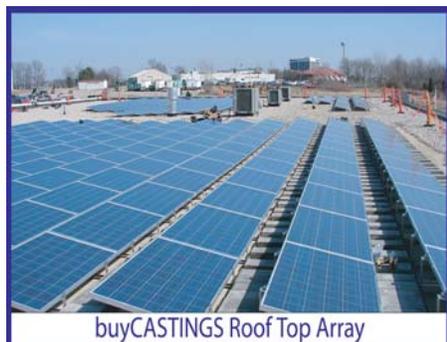
## buyCASTINGS.com, Inc. Goes Solar

*March 2011 buyCASTINGS.com, Inc. will commission a 72kW Solar PV Array on its Miamisburg Headquarters Roof...*

In July 2010 Solar Power and Light LLC (SP&L) became the latest spin-off from buyCASTINGS.com, INC. One may ask what kind of partnership would buyCASTINGS.com have with solar power? buyCASTINGS.com saw opportunities to lower cost in alternative energy technologies and to bring the cost savings to the foundries. Foundries are one of the largest consumers using electric power. Metal melting is a very energy intensive manufacturing process. Ohio still has more foundries than any state in the country. With SP&L we can now bring cleaner power directly to the foundries. The power would be sold at a 10-15% discount to the current utility rates that foundries pay to their local utility company. Foundries would still have the grid power (no change there); the only change would be that foundries would be able to use the solar power for their electrical needs first, the balance would come from the grid.



The solar power production peaks at mid-day. Typically foundries may experience their peak power demand during the first shift. Therefore, solar may help reduce the peak demand. This is significant since the utilities billing rate is based on the peak demand. Finally, solar can benefit foundries and other manufacturers to have power at their own premises which they control, ie: in case of an emergency or power outage, or storms, or whatever emergency, the solar panels can provide back-up power to keep critical business functions running.



Solar panels can be installed on roof tops or as a ground mount system. Solar power can also be installed as a carport structure over existing parking lots. Costs range from \$5/watt to \$7/watt. SP&L can help reduce the cost by doing the project as an installer, as a project manager, or as a power purchase entity, ie: the foundries pay for the power they purchase with no capital costs upfront through SP&L's Power Purchase Agreement.

Contact Neil Chaudhry, CEO SP&L to learn how SP&L can help your business go green AND save money, AND help the environment, AND help the United States become energy independent.

Visit [www.SPLsolar.com](http://www.SPLsolar.com)

## The Economy, the Markets & the Breakout of Democracy in the Middle East?

Perspective by Neil Chaudhry  
(Written February 24, 2011)

**In the last three years, we have gone from a near-death meltdown of our financial system leading to the biggest recession since the Great Depression; to questioning our free market system; to a V-shaped economic recovery; to a record high commodity prices; and now, to a breakout of democracy in the Middle East countries.**

*Believe it or not, I think it actually makes sense.*

The meltdown of our financial system was caused by the financial engineers of our society who thought they could “create wealth” by pushing paper (bundled in the form of risky mortgages). Those engineers were actually able to sell mortgages to very “smart people” in the United States and in Europe. Interestingly, virtually NONE of the banks in Asia and South America (and oh by the way Canada, aye?) bite on those CDO (Collateralized Debt Obligation) financial products. Now we wonder who the “smart ones” were. The developed, western countries, the premier experts of capitalism, who were



the dominant players of finance for decades, suddenly came under scrutiny and mistrust here and around the world. In fact, this led many to **question the free market system** and the US financial policies. Did we not regulate properly? Did we allow easy credit for too long? Do we have too much freedom for our banks & corporations to do whatever they want? Will capitalism always be prone

to bubbles and bursts? Can one of these bursts take down the entire nation? The Pentagon actually had rated **the financial crisis as the biggest threat** to our national security in 2008-2009 timeframe.

Then some great steps by the United States government. We “bailed out” the financial industry, and then the housing industry, and the auto industries which were decimated by the financial meltdown. **This started the V-shape recovery in**

**the economy.** Although the unemployment rate is still high after two years, the stock market has climbed back, the earnings are awesome, and the corporations are flush with cash (over a trillion dollars in cash, highest ever recorded.)

**Thanks to QE’s (Quantitative Easing),** the US Federal Reserve for the past one year is flooding the system with dollars since interest rates can’t be lowered anymore and we don’t want to fall in the way of Japan – in a deflationary spiral. Well, if we combine QEs with the growth in the emerging markets and the recovering US economy, we now have commodity prices going up sharply all over the world. **Copper, gold, silver, corn, wheat and oil are all hitting new highs.** In the US due to its large size, (most people don’t realize this but we are still the largest economy – we are bigger than Japan, China, India, Germany COMBINED with respect to total annual GDP) and due to higher labor costs, we don’t feel the effect of high commodity prices nearly as much as the smaller countries where material costs are a big part of their total costs.

So, in **countries like Egypt, Libya, and Tunisia, food and raw materials are a big part of their costs.** Rising prices have a much bigger effect on loss of living standards. High rate of inflation combined with years of dictatorships or autocracies that neglected the living standards of the masses...**what we get – revolutions!**



**What is most interesting in all of this,** well two things: one, during the immediate onset of the financial crisis, despite the fact that it was our financial instruments (made in USA) that caused the financial collapse, the world gravitated to the US dollar; second, since most world commodities are priced in US dollar and the Fed’s QE policy devalues the dollar causing world raw material prices to go up, potentially leading to major uprisings in poor countries...well guess what those countries want, they want a democratic way of life with USA & Turkey for example as their economic role-models (Turkey by the way is one of the most free, market-driven, capitalistic economies of all the Muslim countries.) Ironic but true! **Despite what happens, this shows the power of capitalism and democracy. This shows the United States is still the most powerful nation with one of the best governance and economic systems in the world! And this you will not hear in our popular media.**

*The views expressed are personal, NOT the company’s or buyCASTINGS’ or anyone else at the company.*

**We like to hear your views too.**

**Please email Neil: [nchaudhry@buyCASTINGS.com](mailto:nchaudhry@buyCASTINGS.com)**

# buyCASTINGS Evaluating Production of Composite Products

Dayton Development Coalition, a Miami Valley Economic Development Organization has recently awarded buyCASTINGS' team a \$10,000 Development Services Grant. The project kick-off meeting started in mid-March 2011. The grant is being managed by the Edison Materials Technology Center (EMTEC) a non-profit agency of Kettering, Ohio. Dwight Rust, President of DARCO Consulting, Inc., will conduct and manage the market study. Dwight has over 23 years experience in various urethane products including rigid, semi-rigid, and flexible foam from his tenure at the Inland Division of General Motors in Dayton, OH.

buyCASTINGS.com launched FOPAT Production Inc. in 2008 to commercialize FOPAT, the advanced materials foam technology which has been perfected over the past several years for the investment casting industry. However, over the years, we have seen customer requests for foam composites for various other markets. Before launching a composites business or conducting further product development of composites applications, buyCASTINGS sought a **Center of Innovation's EDA Grant provided by the Dayton Development Coalition** to conduct a market study to quantify the various applications, market size, product performance requirements, competition, cost-benefit analysis, and the investment pay-off analysis of foam based composite commercial products.

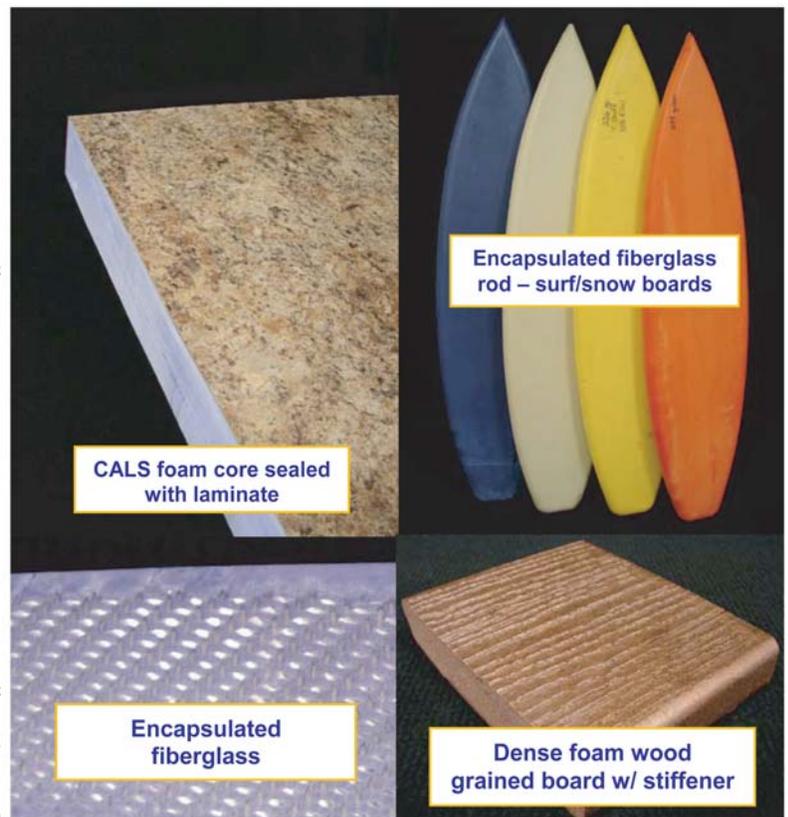
CALS or **Composite and Lightweight Structures**, LLC will conduct the commercial work for the composite markets. CALS is a wholly owned subsidiary of buyCASTINGS.com, Inc., conducting business since 1995 and has worked on multiple projects dealing with prototypes and composite materials for various markets. The unique aspect that CALS can bring is the production of cost effective cores with controlled properties that can be readily customized for military applications and commercial markets.

We believe that there is a strong pull from the military with the need of lightweight sandwich materials. There are also several large commercial opportunities (some of which are highlighted in the photos here). **"This grant will enable us to determine where we should focus and invest for future job creation as well as for the**



**best return on investment for our shareholders," said Neil Chaudhry, buyCASTINGS Chief Operating Officer.**

CALS foam cores have various characteristics that make it unique: the foam can be bonded to a wide range of materials during or after the molding process; stiffeners can be encapsulated such as Nomex®, Kevlar®, Etc.; cores stand up to temperature extremes and exposure to water, ultraviolet (UV) rays, oxygen, oil, grease, and other chemicals and can provide electrical conductivity control; CALS foam cores are precision molded to custom controlled skin, surface finish, and texture. The core properties can be tailored to provide conductivity or insulation or other properties as required by use of fillers, additives, conductive or insulating materials added during the molding process.



# buyCASTINGS In the News

Visit: [www.buyCASTINGS.com](http://www.buyCASTINGS.com) and [www.FOPAT.com](http://www.FOPAT.com)



## OHIO'S THIRD DISTRICT, CONGRESSMAN MICHAEL TURNER VISITS buyCASTINGS.com, Inc.

A few years ago, a gunnery sergeant urgently needed a metal part in the field. He Googled for the part and found it on buyCASTINGS.com's website. The sergeant emailed Bob Dzugan, President of buyCASTINGS.com, asking if Bob could help the military folks get parts quickly. He explained to Bob that at times there are complex multi-million dollar weapon systems that are down



because of one or two critical parts that are in short supply. The sergeant also stated that if buyCASTINGS could deliver quickly, the soldiers would be able to get weapon systems up and running on demand. Bob took this email seriously and said "yes I believe we can help. Would having a part within 24 hours work?" South Carolina Research Association (SCRA) heard about the news and started working with buyCASTINGS to formulate a project and a team. SCRA has helped with the funding and two years later the project started.

The knowledge and experience that Bob Dzugan and Neil Chaudhry (Chief Operating Officer BuyCASTINGS.com, Inc.) have gained throughout their careers, and launching buyCASTINGS.com, Inc. in 2000, have allowed them to do a variety of innovative projects for various customers. This specific project became the Tactical Metal Fabrication System (TACFAB) for the

Army. TACFAB began in 2008. It is a mobile foundry to make quality parts rapidly, on-demand, where needed, and when needed. This project will give our military folks the ability to make parts on site at any location worldwide. Congressman Mike Turner, serving Ohio's third district, visited the buyCASTINGS facility in late 2010 to personally see the TACFAB project in action. He appreciated the innovation and witnessed the progress being made on the project.

Our troops use weapon systems that at times become inoperable due to the wear and tear from the heat and sand. Often one specific part can be the culprit. Let's face it, the supply chain eventually depletes its stock and a soldier may have to wait



weeks or months to receive the part. Waiting for the traditional supply chain can be costly for the field operations and most importantly for the safety of the soldiers. With the mobile foundry TACFAB, the Army will be able to make the part on-demand and over-night in the support camp as needed.

buyCASTINGS team was excited that Congressman Turner took the time to visit our facility. We thank him very much for his interest and we appreciate his support.

## Defense Logistics Agency and buyCASTINGS Achieve Success For Casting Efficiencies

In 2009 buyCASTINGS.com, Inc. was awarded two contracts by the Defense Logistics Agency (DLA). One



helped to launch the FOPAT process in making foam patterns for investment castings at reduced costs.

titled, "Reduced Costs and Lead Times for Discrete Parts Manufacturing of Cast Metal Components". This was actually an extension of an earlier Small Business Innovative Research, (SBIR). SBIR

The second contract was titled, "Implementation of Innovative Metal Casting Technologies to Lower DoD Procurement Costs and Reduce Lead Times". It provided research and development for the Industrial Base Innovation Fund II, ( IBIF II ) to further advance the use of FOPAT in the investment casting industry for parts needed by the DLA.

Both contracts will continue through the fall of 2011. The SBIR contract has helped to fund research into different tooling materials helping buyCASTINGS characterize the advantages and disadvantages of each when coupled with FOPAT. We have numerous examples of being able to produce tooling in less than 3 weeks at significantly reduced costs. The contract has also funded research leading to the verification of reduced energy in the pattern making process. It takes 70% less energy to make a FOPAT pattern compared to a wax pattern. Studies show dimensional stability and repeatability far exceeds the wax process. Patterns have been successfully made which are virtually impossible to make with wax. The IBIF contract has aided buyCASTINGS to expand the number of foundries that have conducted tests with FOPAT



patterns. The purpose of the contract is to expand the number of suppliers available to the DLA to make needed spare parts. To date, over 50 foundries have

the opportunity to make castings from FOPAT patterns. In addition, over 25 different parts have been successfully made and sampled. As the success grows it is apparent that FOPAT has demonstrated significant savings in time, up front tooling costs and finished part cost, and, provide superior dimensional accuracy.

The partnership with the DLA has been beneficial for both organizations. It has brought opportunities for foundries to supply needed investment castings for our Military. The future looks bright for FOPAT thanks in part to the contracts awarded to buyCASTINGS.com, Inc. by the DLA.

Consider if you're an investment casting foundry and you haven't tried FOPAT yet - you should. If you want the opportunity to supply the DLA with parts, FOPAT can give you the edge to win the bid. Or, if you're a casting user and you need quick response for prototypes or better

dimensional accuracy at a lower price, you owe it to yourself to contact FOPAT Production, Inc. (a division of buyCASTINGS.com, Inc.) and see how FOPAT can be part of your future too!

## buyCASTINGS.com, Inc. Receives ITAR Part 122 Registration

For those not familiar with ITAR, it is the International Traffic in Arms Regulations. In January 2011 buyCASTINGS.com, Inc. received its registration from the Office of Defense Trade Controls Compliance, Compliance and Registration Division (CRD).

Companies who are manufacturers, exporters, and brokers of defense articles, defense services, or related technical data as defined on the United States Munitions List (USML), (Part 121 of the ITAR) are required to register with the DDTC (US Department of State, Directorate of Defense Trade Controls). This means that the company has the knowledge and understanding to abide by the ITAR as it applies to the USML linked goods or services.



Having this registration is a means to provide the US Government with necessary information on who is involved in certain manufacturing and exporting activities. What makes this essential is that even though a company registers with the DDTC to sell products or services in the ITAR industry, the company also **must not violate** ITAR compliance regulations. In other words, the company itself is certifying that it is operating in accordance with the ITAR when they accept being a supplier for the USML prime exporter.

Today, many castings buyers are requiring that members of their supply chain be ITAR Registered. This can be with contracts, purchase orders, request for proposals, and more. buyCASTINGS is a trusted partner in the casting industry and can match casting requirements to a global manufacturing network. The ITAR registration is an additional value on which our customers have complete confidence that buyCASTINGS has the knowledge and expertise to manage their global supply chain.

# FOPAT In the News

Visit: [www.buyCASTINGS.com](http://www.buyCASTINGS.com) and [www.FOPAT.com](http://www.FOPAT.com)



## FOPAT Can Save On Tooling Costs and Expedite Delivery

Today, manufacturers are seeking a competitive edge in this economy and are constantly looking for new innovative methods to streamline their processes, reduce tooling costs, and bring their products faster to market. Since the 90's, the investment casting industry has gone from traditional wax patterns to rapid prototype (RP) patterns using SLA (stereolithography) to help decrease time and increase productivity. Despite the earlier problems faced in using SLA with the traditional wax process, technology has improved allowing RP patterns to be suitable for low production use in the investment casting industry.

Although RP technology has eliminated the need for expensive tooling typically associated with wax patterns, there still is significant cost in producing patterns. Because of this, you will quickly lose any cost advantage using this method except for the lowest volumes. This is where the FOPAT technology has really excelled. The characteristics of the FOPAT material allows the manufacturing of tooling with inexpensive materials and simple designs. Since FOPAT is injected at a very low pressure and utilizes an exothermic process, little to no heat is required to be added or removed from the tooling material allowing less energy intensive and less expensive tools than those traditionally used. In most cases the FOPAT material really becomes cost effective over wax patterns and RP pattern production in the manufacturing of short-run patterns (in the range of 5 to 200 pieces).

A good example to show how tooling cost can be less expensive is the Handle Tooling (as shown on the right). Here is a situation where a single SLA would cost \$1,800.

A quantity of 10 SLA's would cost \$12,330. The tooling and 10 FOPAT patterns would cost \$6,200, almost half the cost of SLA's. Designing the tooling to make the pattern in two halves eliminated any need for slides or cores that would have been required to make the part in wax, a fact that would increase the tooling cost and manufacturing cost in wax tremendously. The FOPAT halves are easily assembled. Tool lead time was 5 days and the first patterns were produced in a day. From that point forward with tooling in hand patterns can be produced quickly, accurately, and at a cost far less than that of a SLA .

Keep in mind that the savings in tooling doesn't stop there. Perhaps there are changes in the design over the life of the part, or the worse case a replacement is needed, this type of tooling is far less expensive than wax tooling. The cost effectiveness will vary depending on the design and complexity of the part you wish to make. However, in almost every case FOPAT should be considered for future investment casting needs!

Learn more at [www.fopat.com](http://www.fopat.com)



## FOPAT PRODUCTION, INC. Receives ISO 9001:2008 Quality Management System Certification



ISO 9001  
FM 566955

In 2010 the Management Team of FOPAT Production Inc. (FPI), lead by partners Bob Dzugan, President, and Neil Chaudhry, COO began implementation of the ISO 9001:2008 Quality Management Systems (QMS) standard. FPI is a manufacturer of FOam PATterns and engineered foam products.

ISO 9001:2008 is a worldwide recognized standard. The

requirement of ISO 9001:2008 ensures that senior management takes a strategic approach to operational quality objectives and relevant business goals. Evidence shows that companies who are certified to ISO 9001:2008 have enhanced operational efficiencies through market share, driving down costs, reducing waste, and managing risk more effectively. For these reasons, buyCASTINGS, parent company of FOPAT, is committed to continual assessment and improvement of its quality systems and plans to continue implementation of the ISO 9001:2008 standard throughout the entire organization within the upcoming year.

## New Addition to the buyCASTINGS.com Team



### DJ Stacy

DJ Stacy joined buyCASTINGS.com as CAD Engineer. He has 11 years experience working in the sand casting industry. Previously, DJ held the position as a Foundry Engineer at a Southern Ohio foundry handling request for

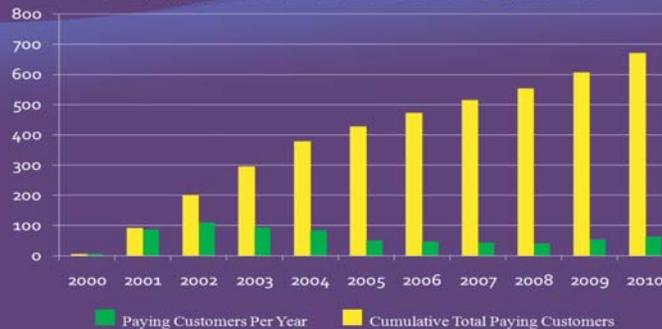


quotes that included tooling design as well as gating and foundry process design. DJ would oversee the CAD work process, mold design, and casting the part along with quality control. DJ has knowledge of defect analysis and is able

to determine the appropriate corrective actions to take. In addition, DJ has extensive 3D modeling experience utilizing various CAD software packages and production solidification modeling for casting defect prediction. He has worked on numerous reverse engineering projects to produce various castings such as crane parts, coal mining equipment, using steel and iron castings. DJ is currently completing a dual major in Mechanical Engineering Design and Software Engineering Technologies at the Cincinnati State Technical College.

## Growing Customer Base

# of Paying Customers Per Year & Cumulative Paying Customers



## What customers are saying...

*"This is perfect...we want to do this!!"*

New customer after the Solar Power & Light presentation.

*"You guys are great to work with...."*

Supplier/partner on solar power project.

*"That's right in line. You'll have the PO. Let's go."*

Large corporate buyer after proposal presentation for casting project.

*"Thank you for the metallurgical input you supplied with the quotation. The others hadn't been as comprehensive with technical information."*

A machining/fabrication facility located in Canada

## Visit Us at These Upcoming Tradeshows

**April 1-6, 2011**

3D SUG  
Miami, FL

**May 10-12, 2011**

Electric Power  
Rosemont, IL

**May 24-26, 2011**

Rapid & 3D Imaging  
Minneapolis, MN

**October 9-12, 2011**

INVESTMENT CASTING INSTITUTE  
58th ANNUAL TECH EXPO  
Booth# 417  
Covington, KY

**Nov 28 - Dec 1, 2011**

DMC  
Anaheim, CA

**Dec 13-15, 2011**

PowerGen INTERNATIONAL  
Booth# 7122  
Las Vegas, NV



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