



A Message from the PIRC

Greetings to members, partners, and supporters.

Penn College's PIRC is the official certification center for the Global Standards for Plastics Certification (GSPC) for North & South America. GSPC, an international training program for plastics industry employees, started as an apprenticeship program in the United Kingdom.

Companies have embraced the GSPC program to train and certify exemplary knowledge and skills of their employees. Programs like GSPC are designed to raise the standards of performance for employees resulting—in our experience—in increased manufacturing efficiencies. The effort required to set up a structured training program yields a return on investment many times over.

A meeting was held at Penn College with two members of the Pennsylvania IRC network to discuss creation of an alliance with Workforce Development & Continuing Education (WDCE), including the PIRC. The discussion with MANTEC and IMC featured, in particular, workforce development programs offered by each group which could be combined in partnership for mutual benefit. Our mutual objectives are to reach as many Pennsylvania companies as possible, to facilitate their training needs.

A regional topical conference is planned in Cleveland, on June 5-7, by the Rotational Molding Division of Society of Plastics Engineers (SPE). The PIRC held leadership positions in SPE's Rotomolding Division for the past decade. This year, Gary McQuay is serving as chairman leading the planning for this industry event.

Check inside this newsletter for the schedule on plastics workshops featuring top industry experts. These are the premiere hands-on workshops for the plastics industry.

Thanks for your continued support for this valuable program.

BECOME A PIRC MEMBER

Discover the benefits of being a PIRC member. The annual membership cost of \$5,000 is applied toward projects and services at discounted rates (*does not include materials, shipping, and training*). Once membership funds are expended, the member will be invoiced monthly at discounted rates for completed work. PIRC members receive a 20% discount on select PIRC courses. For more information, e-mail pirc@pct.edu, call 570-321-5533, or visit www.pct.edu/pirc/members.htm. Become a PIRC member today!

Current PIRC Members

Berwick Offray, LLC, Berwick, PA
Brentwood Industries, Reading, PA
Covestro, Pittsburgh, PA
Fabri-Kal Corporation, Hazleton, PA; Kalamazoo, MI
Fenner Drives, Manheim, PA
(New) **GGB Bearing Technology**, Thorofare, NJ
Greiner Packaging Corporation, Pittston, PA
Honeywell International, Lisle, IL; Nazareth, PA; Pottsville, PA; Morristown, NJ; Lakeville, MN
Nutek Disposables/First Quality, Hazleton, Lewistown, Lock Haven, and McElhattan, PA; Riviera Beach, FL; Macon, GA
The Pennsylvania State University, University Park, PA
Plastic Ingenuity, Cross Plains, WI
Poly Processing Company, LLC, Monroe, LA; Winchester, VA; French Camp, CA
PolyVisions, Manchester, PA
Rogers Corporation, Woodstock, CT
Sekisui SPI, Bloomsburg, PA
TOTAL Cray Valley, Exton, PA
(New) **Univation Technologies**, Freeport, TX
Zzyzx Polymers, Allentown, PA

Don't miss out on our upcoming workshops.

If you are an SPE Member or registering early, score a discount. See page three for details and other discounts.

Paulson Plastics Academy Comes to Penn College

The PIRC is proud to announce three Paulson Training Academy courses to be held at Penn College:

- **ProMolder 1**
September 20–23
- **ProEx 1**
September 27–30
- **ProEx Blow Molding Technology**
November 8–10

For more information on these workshops, go to www.paulsontraining.com. Paulson Training Programs, Inc., partnered with Penn College to bring the only global plastics certification program to companies (see below).

Global Standards for Plastics Certification (GSPC)

GSPC is offered for blow molding, extrusion, injection molding, and now thin-gauge thermoforming. GSPC is a combination of plant/company-specific training, procedure auditing, interactive computer-based modules, and process simulation software. GSPC is the in-house answer for your training needs.

From a pilot study, companies reported improvements in many areas including throughput efficiency, quality measures, customer service measures, reduction in scrap rate, and increases in the ability to recycle materials.

Companies reported the following:

- A cost savings of over \$70,000
- Reduced customer complaints by 5%
- Reduced monthly scrap rates by more than \$1,200 per month
- Raised production output from 56% to 81%
- Throughput efficiency increasing by \$1,000 per month
- Reduced scrap rate by 2% per month
- Reduced turnover by 3%
- A manager stated in an interview, “Our safety record has gone from the worst in the division to the best in one year.”

Contact the PIRC for more information.

Schedule a Customized Course

If you have a need for customized training at your location, contact pirc@pct.edu or call 570-321-5533.

SUCCESS STORY

RADIUS invented a two-part toothbrush product line. The components were a head made of transparent plastic and a handle made from either a solid plastic or an electronic handle that delivered the amount of time necessary to brush and a meter to count the number of uses.

Shortly after launching the product line, customers started to return a large number of toothbrushes. The common problem was that the head snapped off at the point of insertion into the handle. Our engineering team immediately assumed that the design of the junction between the two components was poorly engineered and overloading the head component, thus causing failure.

We re-designed the junction, re-built the molds, and returned to production. Within a month or so, we were back again receiving broken toothbrushes in the mail, followed by letters of complaint.

The Ben Franklin Technology Partners associate in our area, Connie Faylor, suggested that we approach Pennsylvania College of Technology and ask for suggestions. An initial meeting produced the idea of a research project to analyze our failures and to make recommendations for the materials. RADIUS and Ben Franklin Technology Partners enthusiastically entered into this project.

After a few months of intensive research, the team at Penn College had taken a large number of our replaceable toothbrush heads, run them through a battery of rigorous tests, and established the cause of the failures. It was not an engineering issue, but a failure of the transparent ABS plastic that we had selected. Toothbrushes are subjected not only to stress from the action of brushing, but also are immersed in toothpaste. The ingredients of toothpaste include peppermint oil (a very potent chemical), bicarbonate of soda, and hydrogen peroxide. All of these chemicals can corrode plastics, in particular when the plastic is already weakened by being transparent.

Having successfully analyzed this complex problem we were now faced with the need to replace the ABS with another material that would not fail. Penn College professors and associates analyzed multiple plastics and came up with a final suggestion – Trogamid nylon from Degussa in Germany. This plastic is extraordinarily resistant to attack from chemicals. Further extensive testing at Penn College proved that it resisted the three main culprits of our failures. RADIUS put this plastic into service immediately. We have not received a broken or snapped-off head ever since.

Some years on, RADIUS is celebrating great success and, in particular, our Source™ product line, with the infamous replaceable heads, is now our leading product.

Penn College did a terrific job in analyzing and locating the source of failure and in recommending new plastics to replace them.

I recommend them highly.

Kevin Foley
Chairman/Founder
RADIUS Toothbrush
www.radiustoothbrush.com





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SPE Member Discount

SPE Members receive a 10% discount on any of these classes. When registering, simply type "SPE Member N2016" in the comments. SPE Memberships will be verified by registrant's e-mail address. Discounts cannot be combined.

Training programs are offered in cooperation with our national Alliance Partner, Society of Plastics Engineers (SPE).

2016 Spring/Summer Workshops

Register online at www.pct.edu/pirc (in comments, use code N2016).
These courses are held on the Penn College campus in Williamsport.

Lean Six Sigma Black Belt

Tu-F, April 26–29; M-Th, May 23–26; and M-Th, June 27–30

8 a.m.–5 p.m.

Instructor: James Athon

\$6,500

50% Funding provided by CPWDC through the US Department of Labor "Make It In America" grant. (To be eligible, companies must be located in Bradford, Centre, Clinton, Columbia, Lycoming, Mifflin, Montour, Northumberland, Snyder, Sullivan, Susquehanna, Tioga, or Union County). First come, first served.

Color Science

May 3 & 4

8:30 a.m.–4:30 p.m.

Instructor: Jack Ladson

\$795

8th Annual Hands-On Rotational Molding and Advanced Materials Workshop

May 10 & 11 8:30 a.m.–4:30 p.m. (T); 8 a.m.–4:45 p.m. (W)

Instructor: Paul Nugent

\$995

Save by registering on the ARM website at: www.rotomolding.org/events

- \$945, Registrant (e-mail adamw@rotomolding.org for login)
- \$895, SPE RM Member
- \$845, ARM Member

Decoupled Molding I - Cycle Development, a Structured "Scientific" Approach

May 16 & 17

8 a.m.–5 p.m.

Instructor: Tim Weston

\$795

Decoupled Molding II - Cycle Development and Troubleshooting

May 18–20

8 a.m.–5 p.m.

Instructor: Tim Weston

\$1,095

7th Annual Hands-on Heavy-Gauge/Cut-Sheet Thermoforming Workshop

May 17–19

8 a.m.–5 p.m.

Course leader: Jay Waddell

\$1,295 (\$100 early-bird discount before April 4)

Plastics Materials Selection & Testing

June 1 & 2

8:30 a.m.–4:30 p.m.

Instructor: John Bartolomucci

\$795

18th Annual Extrusion Seminar & Hands-On Workshop

June 7–9

8:30 a.m.–4:30 p.m. (T, W); 8:30 a.m.–3 p.m. (Th)

Instructors: Drs. Chris Rauwendaal & Kirk Cantor

\$1,295 (\$100 early-bird discount before April 4)

Plastics Materials & Processing

June 15–17

8:30 a.m.–4:30 p.m. (W, Th); 8:30 a.m.–noon (F)

Instructor: John Bartolomucci

\$945

7th Annual Hands-On Thin-Gauge/Roll-Fed Thermoforming Workshop

June 28–30

8 a.m.–5 p.m.

Course leader: Mark Strachan

\$1,295 (\$100 early-bird discount before April 4)



Partners in Excellence is published by the PIRC at Penn College.

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PIRC Mission

To provide technology resources to facilitate the growth and success of the plastics industry in the United States and throughout the world. The Center, dedicated to excellence, serves the education, training, and research and development needs of plastics processors, resin suppliers, mold builders, and equipment manufacturers offering access to extensive material testing laboratories, industrial scale process equipment, world-class training facilities, and highly skilled training and consulting staff.