

# SOCIETY of MANUFACTURING ENGINEERS

## TORONTO CHAPTER 26

### OCTOBER 2002



<http://www.sme-toronto-26.org/>

## Tour: Machine Vision Inspection Systems

R.G. Shelley Limited  
41 Coldwater Road, Toronto, Ontario, M3B 1Y8. 416-447-9313  
[www.shelley.com/Html/fr\\_ContactUs.html](http://www.shelley.com/Html/fr_ContactUs.html)  
7:00 pm, Thursday October 24, 2002



See Vision Systems that allow precise measurement of critical dimensions, and tolerances that are virtually unmeasurable by human operators.

The Shelley Industrial Automation Companies supply high technology automation Vision technologies, control products and services. The vision systems used on automated equipment range in the complexity depending on the inspections performed. Vision may be used to inspect items as simple as part presence or as complex as measuring the concentricity of a hole diameter with minimal tolerance.

On this tour, **Shelley** is able to accommodate 20-30 people utilizing two different rooms with two different vendors and technologies. Agenda:

**Both Rooms:** Discussion on generic machine vision terms, fundamentals and principles, i.e. lensing, lighting, speeds, CCD vs. CMOS technology etc. The group will then divide into:

**Room 1:** DVT Disruptive Virtual Technologies; Overview of various DVT hardware platforms; Getting an image. Getting the appropriate FOV; An overview of Framework software and all tools including: part tracking, intensity checks, edges, math tools, measurement, and readers; Working with software.

**Room 2:** Banner Engineering - Presence Plus Pro; Hands-On Examples Hardware Setup Programming the sensor Programming a Part for pass/fail

**Shelley** has been in business since 1959, specifying, providing, supporting and assisting in the integration and programming of the highest quality devices for Canadian manufacturers.

**Shelley** provides:

- Access to the newest technologies from the highest quality manufacturers.
- Quality support throughout the process; expert



technical advice on the selection and application of automation technology products.

- Product integration support as required, including complete integration services, programming and sub assembly.
- Frequent standard technical training classes, and custom training at our facilities or at our customers facilities.

Automation encompasses a vast array of complex components, systems, software and engineering challenges. RGS is one of the foremost distributors of technologically advanced automation products.

**Register today for this event with Loris Giuricich 416-448-2225, [Lgiurici@celestica.com](mailto:Lgiurici@celestica.com) or Ken Kogej 416-402-3146, [Ken-dante.msn@attcanada.net](mailto:Ken-dante.msn@attcanada.net)**

*\$10 for members (CMMA & CTMA included), \$20 for non-members, student members \$5.*

## Mark Your Calendars: THIS SEASON: Topics & Schedule 2002-03

Thursday November 28: **Six Sigma**. Speaker: Andrew Milivojevich (see p 3). Giorgio D Ristorante, 5:45 pm - social, dinner, presentations, 7:15 pm - talk.

Thursday January 23: TBD

Thursday February 20:7 pm: "Waste Management from a Manufacturing Viewpoint" at Husky Injection Molding (Bolton). Tour and talk on site.

Thursday March 20: TBD

Thursday April 10: TBD

Wednesday May 14: TBD

Wednesday June 4: TBD

## Bulletin Copy Deadlines

**NOTE: Send material to Jenny Ono Suttaby at [jono@jentekcompany.com](mailto:jono@jentekcompany.com) by the following dates for inclusion in the upcoming Chapter Bulletin:**

November Issue: by Oct 14

December/January Issue: by Nov 15

February Issue: by Jan 16

March Issue: by Feb 14

April Issue: by Mar 7

May Issue: by April 11

June Issue: by May 2

## Note: The Joseph R. Benedetto Scholarship

The Application Form for the Joseph R. Benedetto Scholarship is available on the chapter web site at [www.sme-toronto-26.org](http://www.sme-toronto-26.org).

## The SME Chapter 26 Bulletin

The **SME Chapter 26 Bulletin** is published eight or nine times a season by the Toronto Chapter of the Society of Manufacturing Engineers (SME). The SME provides support for people and industries in manufacturing by providing opportunities for networking, professional development and technical information.

Headquarters of this 70 year old professional society are in Dearborn, Michigan. For more information or to join, phone or email the Chapter Chair, Ken Kogej, at 416-274-2540 or [Ken-dante.msn@attcanada.net](mailto:Ken-dante.msn@attcanada.net) or Headquarters at 1-800-733-4763. Talks and tours put on by the Chapter are listed on the Chapter web site at [www.sme-toronto-26.org](http://www.sme-toronto-26.org) Headquarters web site is at [www.sme.org](http://www.sme.org)

## Your Company Flyer Bulletin Enclosure Opportunity

Chapter 26 is offering companies the opportunity to enclose their company flyer in our monthly Bulletin mailing. The piece to be included must meet the following criteria:

- 500 folded flyers ready for stuffing into a #10 envelope supplied by 1 week after copy deadline.
- Is of interest to our membership - is manufacturing oriented (we don't want life insurance or travel brochures)
- Weighs less than 3 sheets of 8.5 x 11 in 20 lb bond paper. Larger items could be negotiated.

We reserve the right to reject pieces we do not feel to be consistent with our professional goals and objectives. Our mailing list is currently over 400 manufacturing professionals. The current price is \$300 per issue. We reserve the right to change any of the above items without prior notice. For more information please get in touch with Ken Kogej, 416-274-2540 or [Ken-dante.msn@attcanada.net](mailto:Ken-dante.msn@attcanada.net)

## Executive Meetings

**EXECUTIVE MEETINGS 2002 6:30 pm start:**

Tuesday, October 8, 654 Willard Ave

Tuesday, November 12, 654 Willard Ave

December TBD

Tuesday, January 7

Tuesday, February 11

Tuesday, March 11

Tuesday, April 1

Tuesday, May 6

June TBD

For additional information on the next meeting phone 416-274-2540 or email: [Ken-dante.msn@attcanada.net](mailto:Ken-dante.msn@attcanada.net) or [gheintzman@sympatico.ca](mailto:gheintzman@sympatico.ca)

## Telephone Committee

We are looking for volunteers to form a telephone committee. This would involve spending maybe half an hour a week doing a little member relations building and "taking the pulse" of our membership by telephone. The goal is to poll our members as to the kind of program that would be useful to them professionally and to promote Chapter activities to our members. Any takers? Please phone Ken Kogej, 416-274-2540 or email [Ken-dante.msn@attcanada.net](mailto:Ken-dante.msn@attcanada.net)

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Our continuing thanks to Professor Mark Fox, U of T, for hosting the Chapter's web site on his server at <http://www.novator.com>

### Six Sigma

Six Sigma, the topic of our November 28 meeting, is a business improvement strategy that seeks to identify, reduce, and eliminate variation in a process. The approach requires defining the process function, identifying, collecting, and analyzing data, creating and consolidating information into useful knowledge and the communication and application of such knowledge to remove waste.

The key to business process improvement is the acquisition of knowledge. Management has a responsibility to produce an environment that fosters knowledge creation and encourage and embrace a learning organization.

Through the effective deployment of Six Sigma, the acquisition of knowledge by people is possible. Effective utilization of people can improve process performance, affect product and service quality, positively influence the bottom-line, increase customer satisfaction, and assure long-term business success. In this contribution, the concepts of Six Sigma and its application to the overall business are discussed.

### Trade Shows: 3 in 1

The Canadian Fabricating & Stamping Machinery Show (CFSM), Weld Expo Canada, and Finishing Expo Canada will be held simultaneously at the National Trade Centre, Exhibition Place, in downtown Toronto on October 22, 23 and 24.

Register online at [www.weldfab.ca](http://www.weldfab.ca) or fax your name, phone, email and company information to 416-491-7096. Registration is free before October 4, after which it is \$25.

<http://www.sme-toronto-26.org/>

### The Renewable Energy

Just when I was beginning to despair of anybody understanding the global change in energy which is about to happen to us I saw Bill Clinton on the Lederman show. For several minutes he talked only about the opportunity of renewable energy on mainstream American Television. He described lecturing a bunch of Gulf State (Persian Gulf) business men about how they should get out of the oil business and into the energy business. He described the opportunity to put solar panels on every house, building and factory. He described the opportunity to harness the wind in their deserts. He said this was the new energy and told them they were uniquely situated to lead the exploitation of this new opportunity to create employment for their people.

Can you imagine Bush or Cheney saying this? Gone was the whining of Canadian Government reports about jobs at risk replaced by a focus on the opportunity. This is a change. There will be some new jobs and some lost jobs.

Gone was the talk of using hydrogen with no plan as to where the hydrogen will come from and how it will be stored and transported. And all the losses associated with those processes.

He had one negative sentence where he talked about the impact of global warming on flooding of low lying coastal areas and increasing intense storm damage. But the rest of the chat with David Lederman focussed on the opportunity. The conversion from fossil fuel energy to an electric economy based on solar and wind is a huge opportunity. But be sure to position yourself and your career to avoid the job losses.

*George Heintzman, Past Chair  
gheintzman@sympatico.ca*

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## *Fanuc Presentation 19 September 2002 - A Review*

This was a very professional presentation, packed with information presented by Michael Sharpe the manager of engineering. Mr. Sharpe brought his own projector and lap top and used a Powerpoint presentation highlighted with video clips. His material was very clear and informative. But more important he answered every question clearly and concisely. Michael was able to cover this topic in much more depth and many more examples than he had time for during the Fanuc tour last spring.

The first point he made was that the most important factor in a robotics project are clear concise business objectives. The most common factor leading to lack of satisfaction in a robotics program is a lack of clear business objectives. He gave several illustrative examples. Sometimes people buy more flexibility than can be justified. Sometimes people just forget to include whole categories of significant expense such as maintenance because ease of maintenance was not a business objective.

Of course the need for "Clear Objectives" applies to all systems: computers, machine tools, plant automation, etc. But it is not taught in schools and remains the most critical factor in success.

Most of the rest of his talk highlighted capabilities made possible by new more powerful control systems. The weld wire can be used to touch the part and calibrate the machine even if the wire is curved and the torch is slightly bent. The system can feel for the part to take into account dimensional variations in parts. The welding tip can be programmed to weave or zigzag across the weld at 25 hz using the variation in the current to "feel" for the weld and feedback corrections as it goes. Limits can be set on current or motion and when these are

exceeded the operator can be told to set the part aside and is told which weld and where the variation occurred. This can be shown on a graphic which makes it very clear where the problem occurred. Problems can be accumulated for a period of time and presented in a variety of ways including graphical so that the process engineer can see the problem and fix it. For welds with very large variations a LASER scanner can be attached to the welding head to capture the profile to be filled ahead of the weld and modify the welding path. Michael showed the lengths they go to make their systems easy to operate. Clear names for the process variables and geometry so the operator can understand. Pictures of problems for fast accurate recognition. Programmed automatic error recovery to increase productivity.

Passwords are used to control access to the various levels of function on the machine. All changes are logged by time, date and who made the change. These controllers all come with an Ethernet connection. They have their own web page on the network. This makes it possible to integrate this controller with other processes in the plant such as QC and ERP.

The demonstration of off line graphical programming complete with collision detection of the welding head with tooling and clamps was impressive. All of these features lead to higher productivity and quality. Satisfaction. Thank you Michael.

*George Heintzman  
Past Chair  
gheintzman@sympatico.ca*

## *NB: Please -update Your Information*

*Please* check that your information in the SME headquarters database is correct!

Phone (toll free): 1-800-733-4763. Website: <http://www.sme.org/>

You can renew your membership on line by clicking on "Renew Membership" in the Member Services section.