Message from the Chair  Dr. S. Manian Ramkumar

Thank you for taking time to read the MMET Department’s newsletter. We are proud to be able to reach out to you through this medium and keep you abreast of what is happening at your alma mater.

The MMET Department’s unique curriculum continues to support applied engineering education to include automated manufacturing, mechanical design and analysis, electrical and mechanical systems integration, product life cycle engineering and management, and conventional and alternative energy systems development. Our dedicated faculty and state-of-the-art laboratories continue to support the experiential learning environment for our students. We are currently in the process of developing the metrology laboratory. If you are able to identify equipment within your companies, and your company is willing to donate, please contact us.

We are also preparing for the ABET accreditation visit in 2016. Preparations are in full gear, and we will most probably reach out to you with a survey to document your accomplishments, and understand through your success, our ability to prepare you for lifelong learning - with the ability to adapt, grow, and succeed in a highly competitive engineering workplace.

Faculty Spotlight

Professor Alan Raisanen joined the faculty of the Manufacturing, Mechanical, and Electrical Mechanical Technology Department at RIT in 2012. His current research interests are primarily in the area of mechanical microsystems, essentially mechanical devices which have been shrunk down to microscopic size and redesigned to take advantage of the processing infrastructure used to fabricate electronic chips on silicon.

An example of one of the devices being developed by Dr. Raisanen is shown here in a scanning electron microscope image; the central square region is 20 microns across, or a little less than 1 thousandth of an inch wide. This device is a prototype single pixel variable Fabry-Perot interferometer, which is designed to be fabricated on an optical detector. The top plate is moved up and down by passing an electric current through small metal heaters embedded in the four polymer legs, which cause the legs to buckle slightly by differential thermal expansion. Moving the top plate relative to the bottom plate allows the device to operate as an adjustable optical filter with the peak wavelength sweeping through the visible part of the spectrum and into the near infrared.

This device is designed to be fabricated in large, two dimensional arrays of thousands of individual elements that match the pixel spacing in a solid state imager, such as the ones found in many cell phone cameras. These “hyperspectral” cameras are used in reconnaissance applications for identifying and tracking objects, medical diagnostics (detection of cancerous blemishes on skin, for example), pollution detection, and thermal imaging (see-in-the-dark cameras). This research effort examines the fundamental mechanics of thin film structural materials and advanced manufacturing methods used to bring microsystems to the market in a cost-effective manner.

Announcements & Upcoming Events

• Imagine RIT
  May 2nd, 10am - 5pm
  Free Event - Rain or Shine

• S’mores 2.0 Automation Work Cell on display at Pittsford Wegman’s
  May 16th

• Commencement Ceremonies
  May 22 - 23, 2015

Professor Carl Lundgren will be retiring at the end of the spring semester. Join us in congratulating him on his 35 years of dedicated service at RIT.

Special thanks to the following recent donors:

Hardinge - donated a multi-functional CNC lathe for our manufacturing processes lab
Parlec - donated automated metrology system for our metrology lab
ACE Production Technologies - donated selective soldering system for our electronics assembly lab

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Student Club Spotlight - RIT SAE Baja

Each year, the RIT Baja Team designs and builds an off-road race vehicle and competes on a national level. The competitions are sanctioned by SAE (Society of Automotive Engineers) and are held in the spring. There are three US competitions every year in which we are scored on design, cost, vehicle capabilities, and marketing strategies. RIT has finished within the top ten overall at all three competitions for the past three years. RIT is also one of the very few schools that has the opportunity to compete on the world stage. We have gone to South Africa in the past, and we just recently returned from competing in Brazil, our second time there. Read more here.

Alumni Spotlight

Interview with Lori Rosario

MMET Alumni Ms. Lori Rosario, ’10. Lori is the Director of Operations for Qualitrol, LLC. She is currently working for the company in Belfast, Ireland.

1.) How did your experiences at RIT—in and out of the classroom—help you achieve success in your current role within Qualitrol? My experiences at RIT, both undergraduate and graduate degrees, have helped me succeed in the workplace. At RIT, I not only learned the academics but also balancing work and social activities. I was very involved at RIT, and the variety of courses offered to me shaped me into who I am today. Even the liberal arts core classes have provided value now—as students, we tend to think “why are we taking liberal arts classes when we are going for engineering?” However, all of that actually helps us to be better-rounded in the end.

2.) What do you consider the most valuable aspect of your degree? I believe the most valuable aspect of my degree was that I was able to try different courses and decide what I really wanted to get out of it at the end. My very first co-op helped me solidify my choice of sticking with MET. I was unsure if I wanted to continue this route of mechanical technology, as I thought I may have wanted to go into something different. However, for me, I saw the value of having the mechanical background because we are more versatile for job placements. I have had three different positions in the four years I have been working. I love the variety of what I can do with this degree.

3.) You recently accepted a 2-year assignment in Ireland (Congratulations on that!)—what are you most looking forward to with that assignment? I am looking forward to the challenges this new adventure will bring. Whenever challenged, I feel that I learn the most. I enjoy continuous improvement, and this is my opportunity to apply my learning into our business in Ireland. I am also interested in getting to know the European culture and visit many countries during my assignment here as well.

4.) What advice would you give to current MMET students aspiring to work at your company? The best advice I could give to current MMET students is to learn as much as you can and jump on career opportunities when they are presented. If you have the opportunity to do a co-op in another state or better yet a country, take it and experience independence and further enhance your learning. I did my first co-op in Philadelphia, PA, and it was the first time I was far from my family and friends. However, that experience helped me become even more independent, as it really pushed me out of my comfort zone. You learn so much while adapting to a global environment. Companies are looking for global agility and the ability for employees to drive to real results. Acquiring these skills has been immensely helpful to me with my career path at Qualitrol.

Co-op Opportunities

We still have many engineering students looking for a co-op this summer or summer/fall. They are available in all disciplines. For more information, contact Maureen Arquette (Program Coordinator for Career Services) at 585-475-5081 or mpaoce@rit.edu.

Adjunct Opportunities

Our department is seeking qualified candidates to teach manufacturing and mechanical courses. Join our MMET Department team and help educate future engineers. Contact Stephanie Chapman (srcmet@rit.edu) to submit your resume.

Services Provided

Our department is currently offering research services, failure analysis, training, process development, consulting, and laboratory rental to the electronics packaging industry. If interested, please contact Stephanie Chapman at 585-475-6174 or srcmet@rit.edu.

Connect with us

For LinkedIn users, you can find our department’s page by searching with our group name: RIT – Manufacturing, Mechanical, Electrical Mechanical Engineering Technology group

Visit our website here.