

**STAMI Summer Workshop - 2017
on Polymer Characterization and Heat Analysis**

May 22 - May 26, 2017

The Center for the Science and Technology of Advanced Materials and Interfaces (STAMI), is supporting user facilities for Georgia Tech researchers. Current STAMI instrumentation includes polymer characterization and optical spectroscopy. Additionally, the Heat Lab at Georgia Tech specializes on various thermal analyses of materials.

To increase awareness about the facilities and to provide an introduction to the techniques and instrumentation supported by these user facilities, STAMI is running a workshop on May 22-26, 2017, which is open to all graduate students, postdocs, and visiting scholars in the College of Engineering and the College of Sciences. The workshop has parallel sessions on instruments and techniques used in the polymer characterization and the Heat Lab, and each topic will provide theoretical background, hands-on training, and/or practical considerations for the instruments.

When: May 22-26, 2017

Where: MoSE (see below for detail locations)

Schedule and Format:

I. Workshop I, focused on Polymer Characterization Lab facilities

Based on a survey result, the 5 topics below have been selected and the instructors are listed along with the schedule. There will be designated TAs for each topic, who will help the hands-on lab activities.

Workshop will be held on the basis of one tool per day, including lectures on the background theory (9 am – 12 pm) and hands-on lab activities (1 – 5 pm).

Each instructor will allocate the time for lectures and labs to best fit the topic of the day and provide lecture notes. TAs will prepare the instrument user guides, which will be used during the lab sessions.

Workshop attendees should follow the Lab Safety Rules:

- Always wear safety glasses. We recommend you bring your own glasses, if you have some.
- Always wear long pants.
- Always wear closed toe shoes.

Date	Topic	Lecture (9 am – 12 pm)		Lab/Practical (1 - 5 pm)	
		Instructor	Room	TA	Room
5/22/17	Opening	Seth Marder	G021	-	-
	DSC/TGA	Meisha Shofner	G021	Zhibo Yuan (DSC), Carolyn Buckley (TGA),	2135/G021
5/23/17	GPC	Will Gutekunst	G021	Paul Balding	2142/3201A
5/24/17	SLS* ¹	Jung Ok Park	G021	-	-/G021
5/25/17	DLS	Paul Russo	G021	Xujun Zhang	2142/3201A
5/26/17	Data design and analysis	Paul Russo , Faisal Alamgir , Mark Losego , Aleksandr Blekh	G021	-	-

Check-in time: 8:30-9:30 am everyday.

*¹ STAMI does not have a stand-alone static light scattering (SLS) instrument. However, several GPCs have a SLS detector for measurements of the weight average molecular weight (M_w), the radius of gyration (R_g) and the second virial coefficient (A_2) of polymers. The workshop on SLS will provide background information on how these values are measured. Some raw SLS data will be provided so that the attendees will have a chance to experience how these values are actually calculated through in-class practice.

II. Workshop II, focused on Heat Lab facilities

Six lectures spanning three days and six lab practicals will be conducted, one in the morning (9:30 am - 12:00 pm) and the other in the afternoon (1:30 - 4:00 pm). The Heat Lab tools/techniques which are most widely applicable are as follows:

The format will consist of a lecture period (1 hour) followed by a practical period (1 hour). The same instructor will teach both periods. Attendees will need to have a laptop (or share a laptop) to perform analysis on pre-gathered data. Instructor slides will be delivered as printed handout to provide the course material. Additional analysis scripts (in Matlab) will be distributed to aid in the data analysis. The instructors are also listed.

Date	Topic	Primary Instructor	Support Instructor	Location in MoSE
5/23/17	Opening	Seth Marder	-	1226
	TDTR* ²	Brian Foley	Tom Bougher	1226
	FDTR* ³	Misha Rodin	Brian Foley, Sampath Kommandur	1226

5/24/17	3-Omega	Sampath Kommandur	Shannon Yee	G011
	Hot Disk	Eric Tervo	Misha Rodin	G011
5/25/17	Raman Thermometry	Nick Hines	Luke Yates, Tom Bougher	1226
	Photoacoustic Technique	Zhe Cheng	Tom Bougher	1226

*² Time Domain Thermoreflectance

*³ Frequency Domain Thermoreflectance

Check-in time:

For morning session: 8:30-9:30 am everyday.

For afternoon session: 12:30-1:30 pm everyday.

Registration:

- * The number of registration: maximum 20 each for workshop I and II (first come, first served)
- * Registration fee: none
- * The registration can be made on individual subject(s)
- * First official announcement about the workshop: 4/18/2017
- * Reminder announcement: 5/2/2017
- * Registration: opens on 5/8/2017 and ends on 5/17/2017

(1) Workshop I: <https://stamisummerworkshopi.eventbrite.com>

(2) Workshop II: <https://stamisummerworkshopii.eventbrite.com>

- * TAs can also register for other topics

Other information on the workshop:

- * A STAMI Certificate of Completion will be provided.
- * Lunch and coffee/snack will be provided.
- * An outdoor picnic:
 - Where: outdoor patio outside of the MoSE building
 - When: 5-7 pm on Thursday, 5/25.