

# Multi-Angle

Winter 2014

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## LSU Dates



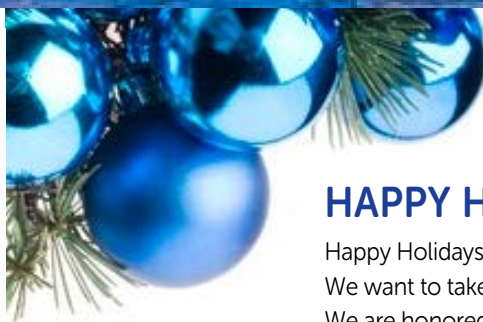
The Acclaimed Light Scattering University course, held in Santa Barbara, CA on the American Riviera, is guaranteed to de-mystify light scattering, work you hard but feed you well, and, of course, explain how to get the most from your Wyatt Technology instruments. [Enroll now!](#)

The next available classes begin Jan. 27, Feb. 24, and Mar. 24, with a special mini-LSU in Woburn, MA on Jan. 14. Dyna-LSU classes begin Jan. 29, Feb. 26, and Mar. 26. [Check the full schedule.](#)

## Regional User Meeting Dates

- » San Francisco Bay Area Protein & Biotech User Meeting - Feb. 12, 2015 in Foster City, CA
- » Southwest User Meeting - March 2015, final date and location TBA

[Register Now!](#)



## HAPPY HOLIDAYS

Happy Holidays from all of us in the Wyatt Technology Family! We want to take this opportunity to thank you for your business. We are honored to work with you and want to do everything we can to make all your contacts with Wyatt a delight!

## LIGHT SCATTERING INVESTIGATOR AWARD

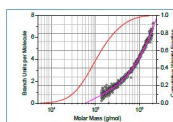
White Paper



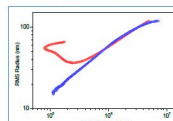
Stepan Podzimek, Ph.D.†

### Summary

This note provides a brief overview of basic principles of the detection and characterization of branching by means of multi-angle light scattering (MALS) detection. The most common methods that can provide branching information are presented and elucidated by means of real experimental results obtained with Wyatt Technology instruments. The abnormal elution behavior of branched macromolecules in size exclusion chromatography (SEC) is explained and the data acquired by SEC-MALS are compared with those obtained by asymmetric flow field flow fractionation (A4F). The comparison of SEC-MALS and A4F-MALS results proves superior A4F separation of large and highly branched macromolecules compared to their separation by SEC. For those who are more interested in branching topic, the Application Note offers several recent literature references.



Number of branch units per molecule plotted against molar mass, determined from SEC-MALS analysis. The curves show the molar mass distribution (red) and the 3rd order fit to experimental data points (purple) are overlaid.



Conformation plots of polymer containing branched macromolecules as determined by SEC-MALS (red) and A4F-MALS (blue). A4F separation is purely hydrodynamic; hence the nonmonotonic relationship between molar mass and molar mass.

Wyatt Technology's Application Note Contest is now open and accepting entries!

Ready to share new ways in which you use your Wyatt products, or some interesting results demonstrating the utility of light scattering in your field of endeavor? Enter Wyatt's Application Note Contest for a chance to receive:

- » A trip to the 24th International Light Scattering Colloquium in Santa Barbara, CA
- » An iPad mini

Submit via e-mail an application note that highlights your use of Wyatt instruments.

See [www.wyatt.com/application-note-contest](http://www.wyatt.com/application-note-contest) for details.

## SAVE THE DATE: ILSC

We are pleased to announce that the next International Light Scattering Colloquium (ILSC) will be held in Santa Barbara, CA in November 2015. The theme this year is "Light Scattering in the nanoWorld – from Proteins to Nanoparticles."

ILSC will include plenary presentations by expert speakers from academia, government and industry, round-table discussions, poster sessions, and updates from Wyatt Technology as well as opportunities to meet and network with Wyatt staff and other users of Wyatt instruments.

Depending on level of demand, we will offer one or two additional ancillary activities: short courses on light scattering techniques, ASTRA and DYNAMICS; and a one-day Focus Meeting providing an opportunity to interact with other users facing the same challenges you may be having. Wyatt staff will be on hand to answer questions related to use of the instruments and software.

For more info, visit [www.wyatt.com/ILSC](http://www.wyatt.com/ILSC).

## FOCUS ON: DONNA LUISI

It was early in her career when Dr. Donna Luisi started using instrumentation from Wyatt Technology for the first time. Donna had just finished up postdoctoral studies with Professor Lynn Reagan at Yale where she worked extensively with various biophysical techniques for protein characterization. However, it was not until taking a position in pharmaceutical research and development with Genetics Institute in 2001 that light scattering began to prove its importance. Her group had "adopted" an abandoned miniDAWN instrument, and they were interested in using it to expand their repertoire of characterization techniques.

At the time, rudimentary techniques such as HPLC and SDS-PAGE gels were the mainstay employed across much of the pharmaceutical landscape. Donna's group used her "new" light scattering instrument along with calorimetry, fluorescence spectroscopy, circular dichroism and analytical ultracentrifugation to greatly enhance their characterization capabilities. The group began to employ a newly found DynaPro DLS instrument as well. Their work now included optimization and development of formulations and dosage forms for peptides, antibodies, drug conjugates and vaccines from Phase 1 through commercial development.

While Donna never received any formal training from Wyatt on the use of these light scattering instruments, she worked closely with Wyatt's Northeast US applications lab and quickly mastered the hardware, software and applications of MALS and DLS. Her lab eventually traded in their initial instruments and expanded their capabilities to include a [DAWN HELEOS](#) detector and an [Eclipse FFF instrument](#).

Over the years, Genetics Institute changed its name to Wyeth and also changed its focus to include several new protein biotherapeutics. Donna's team grew and they began to focus on the increasingly complex characterization of biotherapeutic proteins with indications such as breast cancer, Alzheimer's, solid tumor therapies, Crohn's disease and diabetes. With these new demands on her group, Donna decided to expand the group's characterization capabilities and again looked to Wyatt. Her team now employ a suite of light scattering techniques, including [FFF-MALS](#), [CG-MALS](#), [SEC-MALS](#) and high-throughput [DLS](#).

It is a testament to Donna's knowledge and perseverance that when Pfizer bought Wyeth in 2009, she was tasked with leading the com-



pany's newly formed Biophysical Center of Emphasis. This group employs Pfizer employees from the Andover site as well as the Pfizer site in St. Louis, MO. With this new group, Donna has again looked to her light scattering instruments to lead the charge against the various anomalies that are encountered in Pfizer's protein therapeutic development. As a result of more than a decade of biophysical characterization expertise, Donna is in high demand as a plenary speaker and is routinely invited to speak at many of the top scientific meetings around the country. We are grateful that she serves as a champion for Wyatt instruments both within Pfizer and in public forums.

In addition to being a dedicated and talented scientist, Donna also is a busy mother of three very active boys: Ethan (6), Henry (4) and William (2). She currently resides in Boxford, MA with her husband Dr. John Champagne, Wyatt's Northeast Regional Manager, whom she met on one of her many scientific collaborations.

## CAREER OPPORTUNITIES



*The Scientist* magazine recognized Wyatt Technology as one of the best places to work in the industry for the 5th consecutive year!

- » Application Scientist - Corporate Office
- » Application Scientist – Customer Support, Corporate Office
- » Application Scientist – DC Region
- » Application Scientist – NJ Region
- » QC Lab Technician
- » R & D Engineer
- » VP of Sales – North America
- » Software Development Engineer
- » Manufacturing Engineer
- » Field Application Scientist - UK

## WHAT'S NEW AT WYATT

### Upcoming Seminars

#### CHI's PepTalk

Dr. Daniel Some, Wyatt's Director of Marketing & Principal Scientist, will present:

*Molar Mass, Size and Interactions: Light Scattering Tools for Essential Biophysical Characterization*

Jan. 19, 2015 in San Diego, CA

#### CASSS' Well Characterized Biological Products

Dr. Daniel Some will present:

*Molar Mass, Size, Charge and Interactions—The Light Scattering Toolkit for Essential Biophysical Characterization*

Jan. 28, 2015 in Washington, DC

#### International Symposium on the Separation and Characterization of Natural and Synthetic Macromolecules

Dr. Dierk Roessner, Head of Sales at Wyatt Europe, will present:

*UHPLC Size Exclusion Chromatography Coupled with Multi-Angle Light Scattering for the Characterization of Proteins and ADCs*

Jan. 28, 2015 in Amsterdam, the Netherlands

[Register Here!](#)

#### Biophysical Society Annual Meeting

Dr. Stephanie Cope, Applications Scientist, will present

*The Light Scattering Toolkit for Biophysical Characterization: Lab Essentials for Enhancing Studies of Purification, Crystallization, Formulation, Conjugation, Conformation, and Interactions*

Feb. 8, 2015 in Baltimore, MD

#### 249th ACS Spring National Conference

Dr. Philip Wyatt, CEO, will present:

*The measurement of size and certain structural features of sub-Nanokilometer particles in suspension*

March 22-26, 2015 in Denver, CO (Date & Time TBA)



### Webinars

#### Live Webinar

Feb. 4 - *Vaccines, Well Characterized? Light Scattering Solutions for Biophysical Characterization in Vaccine R&D* – in case you missed the live event on Dec. 3, Dr. Michelle Chen will hold an encore performance.

[Register Here!](#)

#### Now Available on Demand

*Vaccines, Well Characterized? Light Scattering Solutions for Biophysical Characterization in Vaccine R&D* is available if you cannot attend the live event on Feb. 4.

[Automation of Biologics Formulation Preparation and Stability Studies](#)

### Short Course at PittCon 2015

Dr. Sigrid Kuebler, Director of Customer Service & Support, will present a 1/2 day short course at PittCon in New Orleans, LA on Mar. 11, 2015:

*Protein, Polymer, and Nanoparticle Characterization by Light Scattering Techniques*

[Register Here!](#)

## THIS TIME IT'S PERSONAL: SOCIAL@WYATT

As a small, family-owned and operated company, we consider every customer to be part of the Wyatt Technology family. We do our best to get to know you first-hand; and, as a family, we like to keep in touch! Several Social Media channels help us accomplish this:



### LinkedIn Groups

Ask your light scattering peers for advice, keep up-to-date with the latest Wyatt news, or reconnect with LSU classmates through our LinkedIn groups.



**Wyatt Technology** - open to anyone interested in the technology and applications of light scattering for characterization of macromolecules and nanoparticles in solution. Get the latest news and join the technical discussions.



**Light Scattering University Graduates** – for active users of Wyatt instruments.

Join our community [Social@Wyatt](#) for topical discussion groups.

Best Wishes for a radiant New Year  
from all of us at Wyatt Technology