

Multi-Angle

Wyatt Technology News

June 2014

Contents

- SAVE THE DATE: ILSC 2014
- EVENTS: OCEANSIDE & WASHINGTON DC USER MEETINGS
- WHAT'S NEW @ WYATT
- FOCUS ON: MICHELLE CHEN
- APPLICATIONS IN DETAIL: PROTEIN-PROTEIN INTERACTIONS & DLS
- KEEP IN TOUCH: SOCIAL MEDIA
- CAREER OPPORTUNITIES @ WYATT



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 equipment. [Enroll now!](#) The next available classes begin July 8, July 22, August 19 and September 16, with a special MALS training course in Woburn, MA on August 13. Dyna-LSU classes begin July 10, August 21 and September 18. [Check the full schedule.](#)

Regional User Meeting Dates

MID-ATLANTIC REGION POLYMER & NANOPARTICLE USER MEETING – Sept. 16, 2014, in Wilmington, DE.

[Register here!](#)

ILSC 2014

MARK YOUR CALENDARS and get ready for the next International Light Scattering Colloquium, scheduled for November 3-4, 2014. As always, this will be a prestigious event, featuring remarkable speakers discussing world-class science. The theme for 2014:

“LIGHT SCATTERING IN THE NANO WORLD”

WE ARE PLEASED to announce the following speakers are confirmed:

- **Dr. Paul Russo**, Hightower Chair of Biopolymers, Georgia Tech School of Materials Science and Engineering
- **Dr. Frank von der Kammer**, University of Vienna, Department for Environmental Geosciences

Stay tuned for more details coming soon!

User Meetings

OCEANSIDE, CA

Andy Meyer

THE PERFECT COMBINATION of sun and smarts made for a splendid inaugural Wyatt Technology Oceanside Protein & Biotech User Meeting on May 22nd at the Courtyard Marriott.



Our day began with a technical presentation by Dr. Scott Wasko, who discussed applications of light scattering for the analysis

of Antibody-Drug Conjugates (ADCs) and related molecules.

Dr. Dikran Aivazian of Pfizer presented SEC-MALS data related to two key studies on Biotherapeutic Activity and Production of Protein Reagents. Joey Pollastrini finished our morning of technical presentations with a look at “High Concentration Protein Interactions with Composition and Time Dependent Light Scattering,” the culmination of several years of intense and successful CG-MALS, FFF-MALS, SEC-MALS, DLS, and PALS work he has completed at Amgen in Thousand Oaks, CA.

After a delicious lunch on the patio, Dr. Sophia Kenrick presented two case studies in which CG-MALS captured the affinity and stoichiometry of interactions among multivalent proteins. Dr. Sigrid Kuebler, Wyatt’s Director of Customer Service & Support, rounded out our *Cont. on next page*

technical session with a look at high-throughput screening via DLS.

We finished the day with technique-based round-table discussions of FFF, DLS, CG, PALS, and MALS technology, where our participants shared their ideas, challenges, and insights. This session was a fitting capstone for the day, where new capabilities and familiar techniques were blended into goals and visions for future successes. The responses were overwhelmingly positive, and we look forward to our next Southern CA user meeting!

WASHINGTON, DC

Stephanie Cope



The DC Region Protein & Biotech User Meeting focused on employing the light scattering toolbox to study biophysical characterization, protein stability and formulation.

Dr. Lisa Kuelzto of NIH/NIAID's Vaccine Research Center kicked off the meeting with a practical approach to studying VLP formulations using the DynaPro® Plate Reader II. Dr. Chris Rowe (NIH/NIAID Div. of Intramural Research) presented on protein-conjugate analysis via SEC-MALS. Over lunch, Dr. Dan Some, Wyatt's Director of Marketing and developer of the Calypso® composition-gradient system, engaged customers with an interactive session on CG-MALS data analysis.

After lunch, Dr. Allen Minton, the innovator of CG-MALS, discussed "Using DLS to Detect and Quantify the Effect of Osmolytes on Protein Associations". Dr. Di Wu (NIH/NIDDK Lab. of Biochemistry and Genetics) highlighted the Calypso in his discussion of biomolecular interactions. Dr. Reza Esfandiary (MedImmune/Dept. of Formulation Sciences) discussed traditional challenges in characterizing formulations and protein stability, and how the Calypso and DynaPro Plate Reader can be used to overcome these bottlenecks.

Many customers indicated the highlight of the day was the application-oriented round-table discussions, offering Wyatt users a chance to compare sample preparation techniques as well as ask Wyatt scientists detailed questions regarding data analysis. We capped off a great day by sharing our latest software developments, and discussed new product releases. We hope our Mid-Atlantic customers will join us again next spring for a wonderful day of light scattering discussions and networking!

What's New at Wyatt

Upcoming Short Courses

Dr. Andy Meyer, Wyatt's Southwest Regional Manager, will be presenting:

- **UTSW Medical Center, North Campus**
From Conjugation to Aggregation: Light Scattering Tools for Biophysical and Polymer Characterization on July 17, 2014. Register by emailing ameyer@wyatt.com.

Dr. John Champagne, Wyatt's Northeast Regional Manager and Senior Applications Scientist, will be presenting:

- **2014 BITC Symposium**
From Mobility to Stability: Light Scattering Solutions for Formulating Stable Biotherapeutics on August 4, 2014. [Register Here.](#)
- **IUCr 2014**
The Light Scattering Toolbox for Biomolecular Crystallographers on August 6, 2014. [Register Here.](#)

Webinars

[The ABCs of ADC Characterization by the Light Scattering Toolbox](#)

Featured Publications

- [Characterization of Molecular Structure of Acrylic Copolymers Prepared via Emulsion Polymerization Using A4F-MALS Technique](#)
- [The Role of Electrostatics in Protein-Protein Interactions of a Monoclonal Antibody](#)



New Application Notes

- [The Diffusion Interaction Parameter \$k_D\$ as an Indicator of Colloidal and Thermal Stability](#)
- [Screening High-Concentration Protein-Protein Interactions](#)
- [Charge and Interaction Analysis for Predicting Antibody Formulation Stability](#)

Focus on: Michelle Chen

THE DIVERSITY OF APPLICATIONS of light scattering can be daunting: natural and manufactured biopolymers, synthetic polymers, oligomeric proteins, protein-protein complexes, peptides, liposomes, viruses, virus-like particles, monoclonal antibodies, vaccines, micelles, metallic and semiconducting nanoparticles make up just a partial list. It's unlikely that any one person could master the intricacies of characterizing so many types of samples with multiple experimental techniques. Yet with a rare combination of enthusiasm, brilliance, and perseverance, Dr. Michelle Chen has proven that it can be done with scientific rigor and great success.

"Michelle is knowledgeable, responsible, and extremely reliable. She always goes above and beyond answering my immediate measurement related questions; in addition, she frequently shares her knowledge and provides technical solutions for better macromolecular and particle characterization which enables our innovation and improved quality control. I recommend Wyatt Technology based on the trust I have in her and many other excellent scientists at Wyatt."

– Dr. Wei Gao, Dow Chemical Company

How then, did Michelle come to be one of the foremost experts on SEC-MALS, FFF-MALS, DLS, and a variety of chromatographic separation technologies? Initially focused on developing novel HPLC-based biopolymer characterization methods for Czaba Horvath in the Chemical Engineering Department at Yale University, she attended an ACS conference in 1996 and (like so many of our customers) visited the Wyatt Technology booth to meet Phil and Geof Wyatt. Her personality sparkled from the first instant, and the rest is history – the Wyatt's invited her to join the company as an Application Scientist where she

rapidly extended her breadth of knowledge to cover MALS and DLS measurements of all types of macromolecules and nanoparticles. Ever since, Michelle has enjoyed assisting Wyatt users make the most of their instruments across the entire spectrum of applications.

In her current capacity as Head of Analytical Services, Michelle continues to scintillate. Her duties include teaching Light Scattering University, providing application support, performing sample analyses, and presenting seminars and webinars. Michelle's contributions to Wyatt Technology go above and beyond, as she also oversees quality control testing of instruments, develops new MALS applications and helps manage Wyatt's field office in her native China.



Those customers fortunate enough to interact with Michelle appreciate her dedication to solving their characterization challenges as though they were her own. We hope you'll have an opportunity to meet her the next time you are in Santa Barbara for Light Scattering University, the International Light Scattering Colloquium or just to visit. Her combination of friendly demeanor and willingness to freely share her expertise will warm you like a ray of Santa Barbara sun.

"A key element of my career at Wyatt is the customers and their intriguing applications. Every day I help our current or potential customers solve real-life problems, from identifying the optimal instrument configuration for their characterization needs to optimizing the experimental conditions for their unique applications. I look forward to another 18 years working with and helping Wyatt customers."

- Dr. Michelle Chen

Applications in Detail: Protein-Protein Interactions Investigated by DLS

WYATT TECHNOLOGY IS PLEASED to highlight a study recently authored by Martin Skov Neergaard from University of Copenhagen, "[Protein-Protein Interactions Investigated by DLS: Determination at High and Low Protein Concentration](#)."

This article outlines the benefits of quantifying protein-protein interactions using automated dynamic light scattering (DLS) to identify promising candidates for drug-like properties and establish the suitability of formulations before entering stability studies. DLS quantifies protein-protein interactions

via the diffusion interaction parameter (k_D), and Neergaard also explored the relative radius method comparing apparent hydrodynamic radii at low and high concentrations. These methods make the process of characterization much quicker and simpler than standard methods.

For more information regarding protein-protein interactions or the high-throughput DynaPro Plate Reader II, please explore our [Application Notes](#) or watch our series of [Biotherapeutic Characterization Webinars](#).

This Time It's Personal: Wyatt on Social Media

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:



Wyatt Technology LinkedIn Company Page

If Wyatt instruments have contributed to your success, let your colleagues know!



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.



*Are you analyzing protein aggregation? Dr. Chris Broomell, Application Scientist, will blog about the presentations and posters at the **2014 Workshop on Protein Aggregation & Immunogenicity** in Breckenridge, CO, July 14-17, 2014.*



Light Scattering University Graduates – for active users of Wyatt products only. Besides open discussion, we will post important service information here such as firmware updates.

Check the [Social Media](#) page for information on topical discussion groups.

Career Opportunities at Wyatt Technology

THE SCIENTIST magazine recognized Wyatt Technology as one of the best places to work in the industry for the *fifth* consecutive year!



[Associate Application Scientist - Chicago](#)

[Application Specialist, Analytical Services - Corporate Office](#)

[Senior Software Engineer - Corporate Office](#)

[Software Engineer - Corporate Office](#)

[Associate Application Scientist - Boston](#)

[Associate Application Scientist, Customer Service - Corporate Office](#)

See [Wyatt Careers](#) for more information.