



SAS eNews

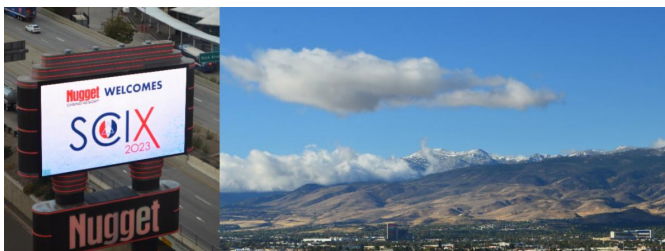


Recapping the Highlights and Memorable Moments of SciX 2023

As I am writing this, it's hard to believe that SciX was happening a month ago, but time flies after conferences! On behalf of the current Newsletter committee, I am happy to help recap the meeting for our readership one last time as a guest contributor.

Gathering for the first time in Sparks, Nevada, at the Nugget Casino Resort was a unique experience—especially having gotten used to our previous Reno, Nevada, venue since 2008. Readers may remember we were supposed to be at the Nugget for SciX 2020 but could not do so related to the COVID-19 restrictions when the meeting

went virtual. For those who missed out on going to SciX this year, many events transpired for the Society, but it was a fruitful and informative meeting as usual. We hope that those who missed this year's meeting will work towards seeing if they can join Society members and others at SciX 2024 in Raleigh, North Carolina, or the 2024 Spring SciX meeting at the University of Strathclyde, Scotland.



The Nugget Casino and neighboring Sierra Nevada mountains welcomes SciX 2023.



(Left to right) 2023 Lippincott Awardee and former Editor-in-Chief of Applied Spectroscopy, Peter Griffiths, giving his portion of the Keynote Speech and SAS Secretary, Ian Lewis, with additional details.

Sunday afternoon began with the Keynote speech by Peter Griffiths, who also coincidentally was this year's Lippincott Award winner. For our reader's benefit, SAS sponsors the Lippincott Award on a rotating basis with *Optica* and this year's awarding group, the Coblentz Society. Peter, former Editor-in-Chief of *Applied Spectroscopy*, is one of the few original scientists, if not the only, scientist who still regularly attends SciX and who was also at the first SciX meeting in 1974. His talk centered around changes of SciX, formally known as the Federation of Analytical Chemistry and Spectroscopy Societies (FACSS) conference, which have happened over the past 50 years. Due to an unforeseen health issue, Peter was not able to attend the conference in person, but he was able to give his talk via Zoom

(with thanks to his daughter). SAS Secretary Ian Lewis also stepped in with a component of his speech to help augment some of the FACSS/SciX conference history.

Following the keynote speech was the annual student poster session that is sponsored by SAS, the Coblentz Society, and FACSS. This reception honors the outstanding achievements of the 2023 student awardees from various sponsoring societies and the federation. Students have an opportunity to present their research before the rest of the technical program starts, allowing for not only additional knowledge exchange, but also for feedback that is critical for their master's or Ph.D. work. Students also have an opportunity to receive an award at the end of the reception for excellence in presenting and technical content, judged by several well-established professionals in our field. As a mid-career professional, it was encouraging to see this year's posters for it was evident that the next generation of scientists are learning how to research and pursue difficult technical problems in unique and effective ways!



The annual student poster session and SAS/Coblentz/FACSS Student Award reception was well attended, with a diverse crowd of people scouring the variety of topics presented by students attending SciX.



(Top to bottom) FACSS 2023 Tomas B. Hershfield awardees, Aleksandr Razumtcev, Adam Rish, and Dongkwan Lee.



The Coblentz Society awarded the William G. Fateley award to Alexis Weber (top left) and Coblentz Student awards to Aleksandr Razumtcev (top right), Danuta Liberda (center left), Daniel Schäfer (center right), Thulya Chakkumpulakkal Puthanveetil (bottom left), and Sevede Erkok (bottom right).



SAS Undergraduate Student awardee Julia Galecki (top left). SAS 2023 SciX Student poster session winners Alexander Cikanek (top right), Der Veng (bottom left), Devon McCormack (bottom right), and Daniel Schäfer (not shown).



Monday night SciX exhibition opening was enjoyed by all who attended. Many people stopped by the SAS booth, which kept SAS President-Elect Gloria Story and Office Manager Angela Gordon busy!

Throughout the week, SAS sponsored several sessions, including several by the Early Career Interest Group (ECIG), which focused on topics that ranged from early-career researchers in diverse analytical area to more general-interest topics such as career evolution as an early career researcher. The ECIG has more details about these sessions in their SciX contribution piece. Monday evening kicked off the opening of the exhibition hall, which was highly anticipated by all. Included in the exhibition hall was a series of posters that included details about all 50 FACSS/SciX meetings, which received a good reception from all attendees. Following

shortly thereafter was the combined ECIG and SAS Student section networking mixer at the sports bar, Game On!, within the Nugget Casino. This well-attended event allowed students and early career members to mingle together and pick the brains of some of the senior professionals who were attending.



SAS student and Early Career members gather at the Game On! sports bar within the Nugget Casino for drinks, snacks, and networking.



The Exhibitor Reception prior to the SAS Awards ceremony allowed everyone some time to enjoy the foggy glow of the Sierra Nevada mountains.

Tuesday's activities kicked off with the Exhibitor Reception immediately following the end of the day's technical sessions, which drew many SAS members as well as others attending the conference. Following that was the annual SAS Awards ceremony and Wine and Cheese reception, where students and professionals alike were recognized for their achievements throughout the last year. SAS 2023 President Peter Larkin gave a brief overview of the changes for SAS this past year, including saying goodbye to long-time Executive Director, Bonnie Saylor, who is ending her service to Society and the incoming management group, Capitol Hill, with Angela Gordon leading the efforts. Richard Crocombe, Editor-in-Chief, briefly reminded SAS members and non-members alike to contribute technical papers to the newly launched *Applied Spectroscopy Practica* journal, an Open Access (OA) journal geared towards industrial and non-academic applications of spectroscopy. John Wasylyk announced that in early 2024 will be the joint SAS and Coblenz Society Student Elevator talks that were very popular in 2022, but hadn't taken place this year, encouraging current students to prepare to submit abstracts for this event.



(Left to right) Barbara Stull Graduate Student Awardees Lamyaa Almeahmadi and Thulya Chakkumpulakkal Puthanveettil.



The SAS Atomic Section awarded to Catharina Erbacher (top left), Cristina Mendez-Lopez (top right), Madeleine Lomax-Vogt (bottom left), and Dariya Tukhmetova (bottom right).



The SAS New England section awarded Maria Montes-Bayon (left) the Lester W. Strock Award for a stellar series of atomic spectroscopy papers. (Center) Johannes Pedarnig accepts the William F. Meggers Award and (left) the SAS/NASLIBS Award for the same publication in Applied Spectroscopy in 2022 for himself and colleagues, Nikoloas Giannakaris, Anna Haider, Christoph Ahamer, Stefan Trautner, and Stefan Grünberger.



(Left to right) Rob Lascola received the 2023 SAS Distinguished Service Award while Sebastian Schlücker, Gloria Story, and Bayden Wood all receive the 2023 SAS Fellow Awards for their efforts with the field of spectroscopy and SAS.



(Left to right) Alexis Weber accepts the William J. Poehlman Award on behalf of the New York Capital Region SAS Student section. Stephanie Zaleski and Hunter Andrews receive the SAS Early Career Interest Group (ECIG) Travel Grants. Ed Macmillan receives the 2023 SAS President's award for his help in taking over as the Applied Spectroscopy Advertising Manager.

The Wednesday and Thursday Plenaries honored our SAS Lester W. Strock awardee, with Maria Montes-Bayon giving an overview of her atomic spectroscopy work over the last 15 years, including using molecular biomarkers of clinical relevance within single cells identified by inductively coupled plasma mass spectrometry (ICP-MS). It also honored the William Meggers awardee (and SAS/NASLIBS Award), with Johannes Pedarnig presenting an oral version of the work presented in his Applied Spectroscopy article, "Femtosecond Single-Pulse and Orthogonal Double-Pulse Laser-Induced Breakdown Spectroscopy (LIBS): Femtogram Mass Detection and Chemical Imaging with Micrometer Spatial Resolution".



(Left to right) Maria Montes-Bayon and Johannes Pedarnig giving their respective plenary talks for the Lester W. Strock and William Meggers awards.

Finally, on Thursday evening, SciX attendees from every organization enjoyed the 70s themed gala, a nod to the first FACSS/SciX meeting in 1974. Friday morning was a brief but good talk closing out the meeting and inviting all to SciX 2024 in Raleigh, North Carolina.

As I close up my last major contribution to the newsletter for the foreseeable future, I want to thank the readers for their support since I took over in 2020, and for all of the smiles given to the camera at SciX, Pittcon, and other SAS events since 2016. It has been a labor of love capturing and documenting the technical prowess and social spirit of the society membership for the last seven years, and it wouldn't be possible without you all. And remember—smile when you get your pictures taken for an award!

Luisa T.M. Profeta



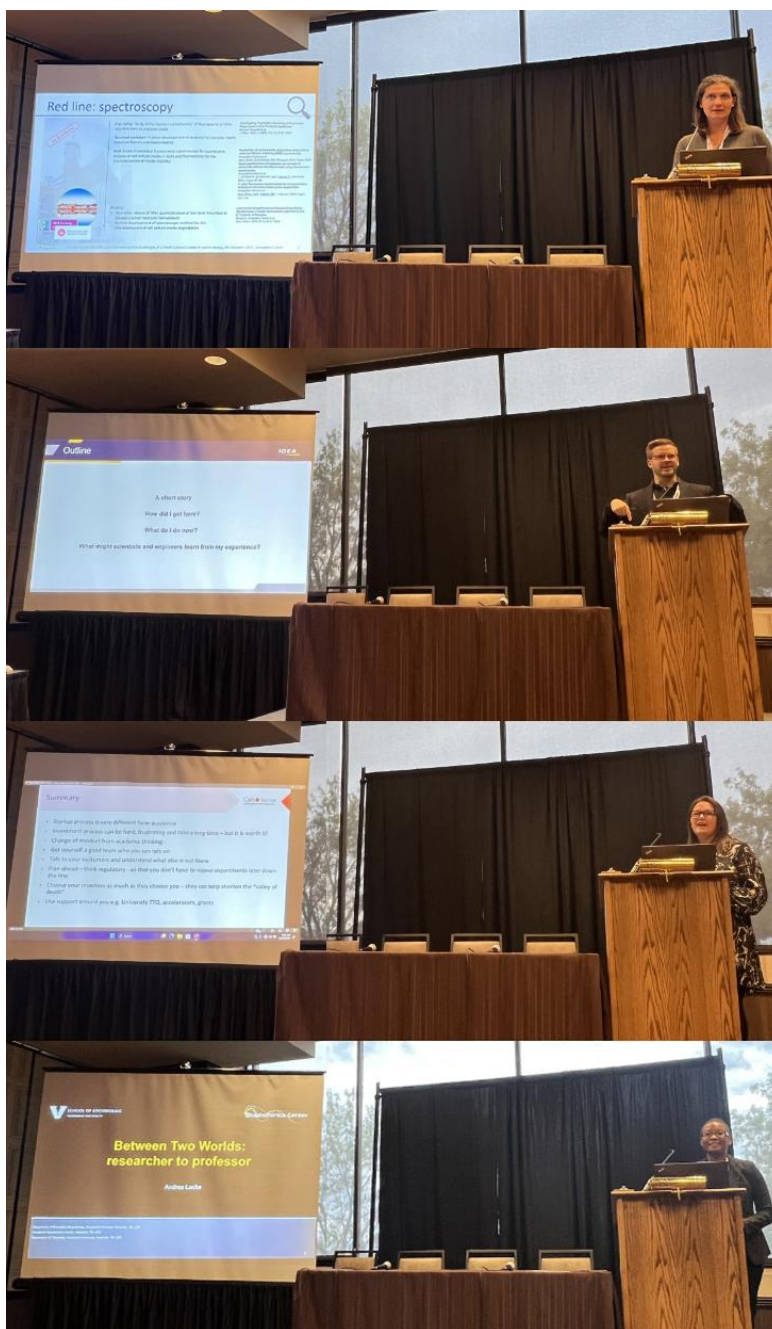
Scientists of all ages enjoying the 1970s themed SciX gala on Thursday evening!

Thank You for Supporting the SAS Early Career Interest Group (ECIG) at SciX 2023!

The SAS Early Career Interest Group would like to say a big "Thank You!" to everyone who supported our events at SciX 2023. We especially want to thank everyone who made our special session possible, which was titled "Showcasing Career Paths in the Spectroscopic Sciences". Lastly, we wish to acknowledge our speakers

for their insightful talks: Andrea Locke (Vanderbilt University), Cerys Mitchell (Cansense Limited), Steven Asiala (University of Notre Dame), and Amandine Calvet (Boehringer Ingelheim Pharma GmbH and Co.).

Anthony Stender, SAS Early Career Interest Group



(Top to bottom) Amandine Calvet, Steven Asiala, Cerys Mitchell, and Andrea Locke presenting their work in the SAS Early Career Interest Group (ECIG) sponsored session titled "Showcasing Career Paths in the Spectroscopic Sciences".

Congratulations to All SAS Award Recipients!

As we conclude 2023 SciX content, it is fitting to once again congratulate the recipients of the SAS awards that were presented during the awards ceremony.

William F. Meggers and SAS–NASLIBS Awards

Recognizing the author(s) of an outstanding paper(s) appearing in Applied Spectroscopy: "Femtosecond Single-Pulse and Orthogonal Double-Pulse Laser-Induced Breakdown Spectroscopy (LIBS): Femtogram Mass Detection and Chemical Imaging with Micrometer Spatial Resolution", Volume 76, Issue 8, Pages 926–936 by

Johannes D. Pedarnig, Nikolaos Giannakaris, Anna Haider, Christoph M. Ahamer, Stefan Grünberger, and Stefan Trautner.

Lester W. Strock Award

Established by the SAS New England section to recognize an author or authors of an outstanding paper or series of papers: Maria Montes-Bayon.

SAS Early Career Interest Group Travel Grant

Travel support for Early Career Scientists (within 10 years of earning terminal degree) to SAS' National meeting during SciX. Awarded to Early Career scientists who demonstrate merit in the field of spectroscopy and/or those who demonstrate financial need: Hunter Andrews and Stephanie Zaleski.

William J. Poehlman Award

Recognizing the SAS Regional Section of the Society, which has contributed the most towards accomplishing the goals and ideals of the Society during the preceding year: New York Capital Region Student section.

SAS Atomic Technical Section Student Awards

Recognizing outstanding student research in Atomic Spectroscopy: Catharina Erbacher, Madeleine Lomax-Vogt, Cristina Mendex-Lopez, and Dariya Tukhmetova.

Barbara Stull Graduate Student Award

Recognizing a well-rounded CV, which included extracurricular activities such as mentoring, volunteering, and teaching, and exemplary demonstration of scientific accomplishments in the field of spectroscopy via research, publications, and presentations: Lamyaa M. Almeahmadi and Thulya Chakkumpulakkal Puthanveetil.

SAS Undergraduate Student Award

Given to junior or senior undergraduate students for outstanding research in spectroscopy: Julia Clista Galecki.

SAS Distinguished Service Award

Recognizing those individuals who have made exceptional contributions to the Society for Applied Spectroscopy: Robert J. Lascola.

SAS Fellows Award

Recognizing individual members for their outstanding service to the field of spectroscopy and the Society for Applied Spectroscopy: Sebastian Schlucker, Gloria M. Story, and Bayden R. Wood.

SAS President's Award

Awarded for recent extraordinary contributions in service to the Society for Applied Spectroscopy: Ed Macmillan, SAS Advertising Manager.

2023 SAS Service Awardees

Andrew Whitley and Luisa T.M. Profeta.

Gloria Story, 2024 President and Alexis Webber, 2024 SAS Student Representative

Farewell Thoughts from SAS Executive Director Bonnie Saylor

I want to thank the SAS Membership, Governing Board, and Executive Committee for allowing me the privilege of serving you for over 27 years. It has been quite a ride and one I am truly sad is ending. I was so young when I joined SAS back in 1996 and in that time I have learned so much and grown in my abilities and confidence. During this time, I raised a family (both my own flesh and blood as well as a SAS family) and made some amazing friendships along the way that will continue far into the future. I will be forever grateful for that.

I would be remiss if I didn't take this opportunity to give some shout outs to those who have been with me on this journey:

Nancy Miller-Ihli, Kathy Kalasinsky, David Coleman, Alex Scheeline, and Jim Holcombe: Thank you for having the faith to hire a young me in 1996. That interview was one for the books!

Rina Dukor, Diane Parry, and Gloria Story: Thank you for always being there and having my back through good times and bad. You are my rocks!

Debbie Bradshaw, Jay Kitt, Ben Manard, John Wasyluk, Chad Atkins, David Bryce, Geoff Coleman, Mike Epstein, and Lynn Zhang: Thanks for lending an ear or a shoulder over the years whenever it was needed. Thanks also for always being willing to lift a box, help with the booth, or carry stuff. You've made my life easier.

Ed MacMillan: Thanks for stepping up when I needed you! You're one cool Scotsman!

Bill Cunningham: Our time working together was cut short far too soon. Thank you for all you did for SAS and me over the years. I wish you continued strength and healing in your health journey.

Andrew Whitley, Karl Booksh, and Peter Larkin: Thanks for doing right by me and making my departure as smooth as possible.

Stephanie Iocco, Victor Hutcherson, and Barbara Stull in heaven: I may be the last man standing at SAS of us all, but despite some ups and downs, your service to SAS is to be commended and I'm glad I got to work with you.

All SAS Members: Thank you for doing what you do and allowing me to be part of your scientific journey with SAS. One of my favorite things about my time with SAS has been meeting you and chatting with you, especially in-person at the SAS booth during SciX and Pittcon. You are the reason SAS is a family.

I don't know what the next chapter will bring for me, but I do know I will always carry SAS in my heart! Cheers!

Bonnie Saylor, SAS Executive Director

Start Planning for the International Day of Light 2024!

In 2023, The Cincinnati Tri-State section hosted a very successful day of Demos at the Cincinnati Museum Center for the International Day of Light. In each demo we aim to tie the fun back to applied spectroscopy and real-world questions. To help you plan your own great event, over the next several months, we will share our demos with you.

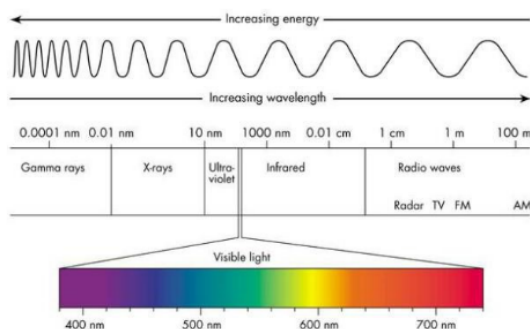
This Month: What are Nanoparticles?

In this activity, we showed gold nanoparticles and how their optical and spectroscopic properties give rise to brightly colored solutions. We also explain how these brightly colored colloids can be used to produce home-use COVID-19 tests, and we demonstrate how surface charge and electrostatic interactions can impact the behavior of the particles in solution".

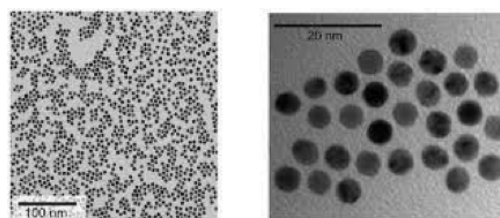
Objective: Learn about the size-dependent optical properties of gold nanoparticles and how rapid COVID-19 tests work.

Nanomaterials are materials that range in size from 1–100 nm, which is approximately one thousand to ten thousand times smaller than the diameter of a human hair! They are used in a wide-range of applications and products, including drug delivery vehicles, TVs, sensors, lipsticks, sunscreens, tennis rackets, bicycles, and many others. Because of this length scale (i.e., size), nanomaterials possess very unique size-dependent properties. Nanomaterials are even smaller than the wavelength of visible light! Because of this, they interact with light in very interesting ways. They can produce different colors and sometimes they 'glow', depending on the chemical composition and size of the particles.

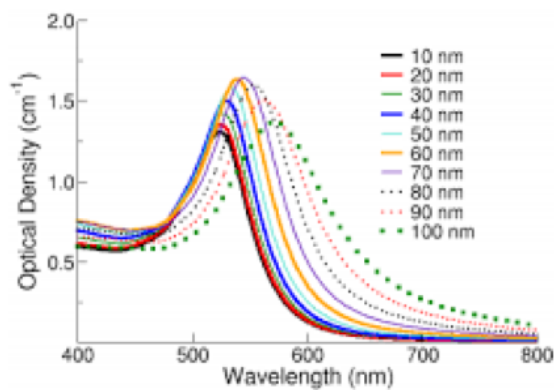
Electromagnetic Spectrum



Transmission Electron Microscopy Image of 5 nm Gold Nanoparticles



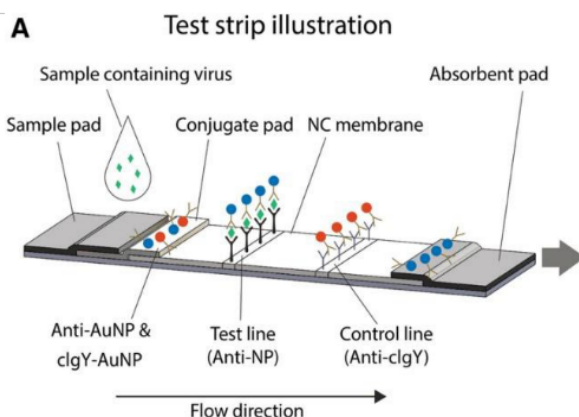
Even though gold nanoparticles are smaller than visible light, they absorb light 500–600 nm very strongly:



Stop and think: Why do you think gold nanoparticles appear red?

How Rapid COVID-19 Tests Work:

Have you ever wondered how COVID-19 tests work and what is that funny line on the sensor? That line is composed of gold nanoparticles!



These are special proteins (antibodies) that selectively bind the SARS-CoV-2 virus that are printed on the sensor surface at a very specific location. Gold nanoparticles are embedded in the sensor, and if you are sick with COVID-19 and the virus is present in your nose swab, the virus will move along the sensor through capillary action (lateral flow) and will make the nanoparticles stick to the positive line. This is why we call this class of sensor a lateral flow assay. There is also a control line that sticks to gold nanoparticles regardless of whether the virus is present.

What do you think the purpose of the control is for?

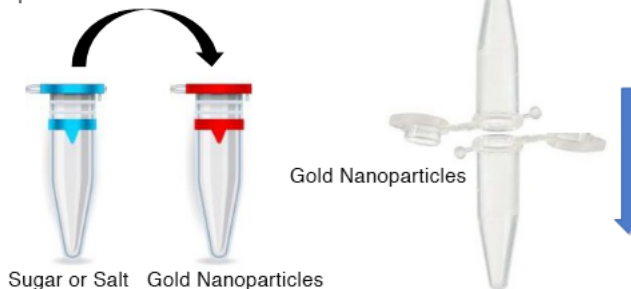
Testing Gold Nanoparticle Sensors

Supplies: Gold nanoparticles, sugar, salt.

Make a prediction/hypothesis:

What do you think will happen when you mix sugar or salt with gold?

Pour the sugar or salt solution into the solution of gold nanoparticles
Sugar or Salt
Tap down on surface



Follow up questions: What colors did you observe when the gold nanoparticles were mixed with salt? What do you think what was happening to the nanoparticles when mixed with salt? Why do you think gold nanoparticles are used in sensors and not in other dyes?

SAS Contact Information Updates (as of 8/7/23)

Our phone number has changed: 518-313-1160 **Please note!**

Our fax number has changed: 518-463-8656 **Please note!**

Our general office email will be: sasadmin@s-a-s.org **Please note!**

Our new mailing address is: **Please note!**

230 Washington Avenue Extension

Suite 101

Albany, New York 12203

Our online services continue at: www.s-a-s.org

Peter Larkin, 2023 SAS President

Do you have something spectroscopy-related you want to discuss in the newsletter? Or something that will help our membership such as career tips or application tips? Please let us know by emailing konnorkjones@gmail.com.

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