Optical Radiation News

Published by the COUNCIL for OPTICAL RADIATION MEASUREMENTS (www.cormusa.org) to report items of interest in optical radiation measurements. Inquiries may be directed to the Editor, John D. Bullough, Light and Health Research Center, Icahn School of Medicine at Mount Sinai, Suite 560, Albany, NY 12205. Tel: 518-242-4620, e-mail: John.Bullough@mountsinai.org.

NUMBER 111 SUMMER/FALL 2024

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JOINT CIE-USNC & CORM CONFERENCE: NOVEMBER 12-14, 2024

Call for Abstracts

The joint United States CIE National Committees and the Council for Optical Radiation Measurement (CORM) will be held virtually on November 12 to 14, 2024. We invite abstract submissions for oral presentations covering any topic related to optical radiation, light, lighting, and vision, including but not limited to:

- Vision and Color
- Physical Measurement of Light
- UV and IR Radiation
- Optical Properties of Materials
- Interior Environment and Lighting Design
- Transportation and Exterior Lighting Applications
- Photobiology and Photochemistry
- Image Technology
- Current Research at National Metrology Institutes

Also included - a workshop led by Jeanne Houston of NIST entitled UV Detector Selection and Performance.

Presentations will be approximately 20 minutes, depending on the number of abstracts received. Abstracts should be 250 words or less. Abstracts should be submitted to: secretary@cormusa.org by **October 1, 2024**. More details about the conference will be posted when available on the following websites: USNC-CIE (www.cie-usnc.org) and CORM (www.cormusa.org).

NIST

NEWS FROM THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY

NIST Ultraviolet Spectral Comparator Facility: Calibrations of Detectors and Filter Radiometers from 200 nm to 400 nm

The applications of UV radiation and the needs for calibrations of UV detectors and filter radiometers are increasing. UV radiation sources can be used for germicidal disinfection, curing epoxies, determining material damage, manufacturing of IC chips, and many other applications. The measurements of such processes require calibrated detectors and filter radiometers. To meet these measurement challenges, the Ultraviolet Spectral Comparator Facility (UVSCF) has been designed, built, characterized and recently approved for issuing calibrations of optical detectors from 200 nm up to 1800 nm. The UVSCF consists of a prism-grating double monochromator with a deuterium (D_2) lamp, a laser-driven light source (LDLS) and a quartz-tungsten halogen lamp as sources. Detectors are mounted on automated X- and Y-stages to enable spatial mappings from 200 nm up to 1800 nm and for detector-based spectral irradiance responsivity calibrations. Routine calibrations of Si diodes are performed using the D2 lamp and calibrations requiring higher powers, such as calibrations of filter radiometers, are performed using the LDLS.

In this new facility, transfer uncertainties of Si diodes are reduced to about 0.1 % for spectral power responsivity calibrations at 200 nm and transfer uncertainties are further reduced to about 0.02 % at longer wavelengths. This improved performance is used for studying UV probes, for stability and selection of detectors and other devices. Using this facility, NIST will pilot the Consultative Committee for Photometry and Radiometry Key Comparison of UV detector spectral power responsivities (CCPR K2.c) from 200 nm to 400 nm. NIST has now extended detector calibrations down from 200 nm to 300 nm and is returning into service the calibration service SKU numbers of 39071C and 39072C, the calibration of NIST supplied UV detectors from 200 nm to 500 nm, as well as the SKU numbers of 39077C and 39078C, the calibration of NIST supplied Si detectors from 200 nm to 1100 nm. An announcement on the UVSCF and its measurements can be found at:

https://www.nist.gov/news-events/news/2024/07/pandemics-pedicures-nist-rebuilds-world-class-uv-calibration-system

Contact: Jeanne Houston, Jeanne.houston@nist.gov

SRI 6013 Standard Reference Optical Radiometer

NIST has developed a Standard Reference Optical Radiometer that is available for purchase through shop.nist.gov. The optical radiometric measurement system was developed at NIST to take advantage of the laser-based calibration facility available at NIST. The measurement system includes a photometer head, amplifier, temperature controller, and other accessories. The photometer head includes an optical window, precision aperture, photometric filter, and photodiode, which is sealed and filled with dry nitrogen gas at one atmosphere. It is temperature-regulated using a thermo-electric cooler. The photometer head is specially designed to be free of interference fringes when it is calibrated using the tunable laser facility at NIST. This SRI has two versions. SRI 6013a is an illuminance measurement system and SRI 6013b is a luminance measurement system. The webpage for the SRIs can be found at:

https://www.nist.gov/sri/standard-reference-instruments/sri-6013-standard-reference-optical-radiometer

Additional information was presented at CORM 2023:

https://cormusa.org/wp-content/uploads/2024/01/13-CORM2023-NMI-Zong.pdf

Contact: Yuqin Zong, yuqin.zong@nist.gov

System Vicarious Calibration Requirements for Satellite Ocean Colour Missions Targeting Climate and Global Long-Term Operational Applications

System Vicarious Calibration (SVC) is the technique that maximizes the accuracy of satellite ocean colour data products by minimizing the impact of inaccuracies affecting the absolute radiometric calibration of the space sensor and the atmospheric correction process. Even if a perfect atmospheric correction was available, the SVC would still be needed due to the limitations in sensor calibration, therefore the SVC is a requirement for all ocean colour missions. Diverse SVC procedures have been implemented targeting different applications such as regional investigations, individual mission explicit objectives and, finally, the most demanding climate and operational applications requiring low uncertainties and high consistency across global multi-mission time series. This White Paper benefits from recent publications and the outcome from a dedicated workshop held at the School of Marine Sciences in St. Petersburg (FL) as an initiative of the Ocean Colour SVC Task Force of the International Ocean Colour Coordinating Group (IOCCG). The White Paper outlines essential requirements for a comprehensive ocean colour SVC framework with a focus on supporting the climate and global operational applications and ensuring the highest accuracy and consistency of global and multi-decadal ocean colour data products. The White Paper key recommendations affirm the essential need to ensure long-term support to SVC infrastructures and activities, and to address remaining open issues on SVC principles, requirements and methods. For more information:

https://www.nist.gov/publications/system-vicarious-calibration-requirements-satellite-ocean-colour-missions-targeting

Contact: B. Carol Johnson, carol.johnson@nist.gov

Maximum Luminous Intensity of LED-Lighted X signs for Airport Runways

This is a report for Inter-agency agreement 693KA9-18-N-00023 "Maximum Luminous Intensity for LED Signaling in an Airport Environment" by Federal Aviation Administration (FAA) and National Institute of Standards and Technology (NIST). The LED-based lighted X signs recently introduced at many airports are perceived too bright by pilots, causing glare and making it difficult to recognize the X character. The objective of the study is to determine the acceptable level of maximum luminous intensity of LED-lighted X signs that maintains clear visibility of the lighted X sign. A theoretical study with literature review was first made (Part 1). Then vision experiments were conducted using pilots as subjects (Part 2). The methods and results of these studies are reported. For more information:

https://www.nist.gov/publications/maximum-luminous-intensity-led-lighted-x-signs-airport-runways

Contact: Yoshi Ohno, Yoshi.ohno@nist.gov

Oxidation Caused by Water Outgassed from the Thermal Blanket on the SDO Spacecraft

The Solar Dynamics Observatory (SDO) is a sun-observing spacecraft that includes two spectrometers that use aluminum membranes to filter solar radiation. The transmission of those filters degraded by a factor of 5 during the first five years after launch. Previously, we showed that that degradation was comparable to that induced in the laboratory by UV synchrotron radiation on similar aluminum filters. Here, we show that a physics-based model fit to the results of our synchrotron exposures can quantitatively describe the SDO degradation if the water vapor pressure pH_2O on the SDO is allowed to be a free parameter. The fitted value of pH_2O for both spectrometers, approximately 10^{-8} mbar, is consistent with the flux of outgassed water estimated for the thermal blankets on SDO. For more information:

https://www.nist.gov/publications/oxidation-caused-water-outgassed-thermal-blanket-sdo-spacecraft

Contact: Edward Hagley, Edward.hagley@nist.gov

RECENT ACTIVITIES FROM NRC CANADA

Blacklight Fluorescent Excitation of Integrating Spheres Sealing Felt

When excited with a 365 nm peak UV blacklight (typically employed for counterfeit bill identification – see Figure 1ab), we identified a noticeable fluorescence of the felt employed to seal the border of a 3 m diameter integrating sphere (see Figure 1c).

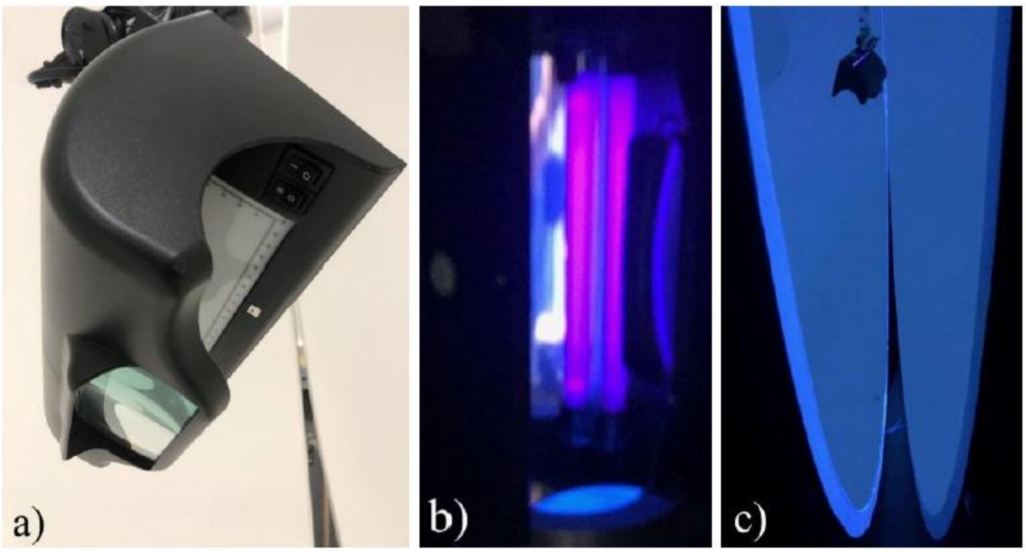

Figure 1. Blacklight lamp typically employed for counterfeit bill identification, here installed in the center of a 3 m diameter integrating sphere (a). Appearance of the blacklight tubes turned on (b). Felt fluorescence excitation on the sphere border (c).

To identify the specific blacklight fluorescence spectrum of the felt, we measured the total flux with a detector on the wall linked to an Instrument Systems Spectro SP320-164 scanning double monochromator, able to characterise the UV 365 nm blacklight peak. We also measured the associated radiance by pointing a Photo-Research PR-745 Spectroradiometer (over 1 deg. field of view at >380 nm only) to the sphere wall and to the felt. The results (in arbitrary units for intercomparison purpose) are shown in Figure 2a. The spectra of the total flux and wall radiance are similar. The felt fluorescence spectrum (Figure 2b), featuring a maximum at 436 nm, is isolated by taking the difference between the felt and the wall radiance spectra.

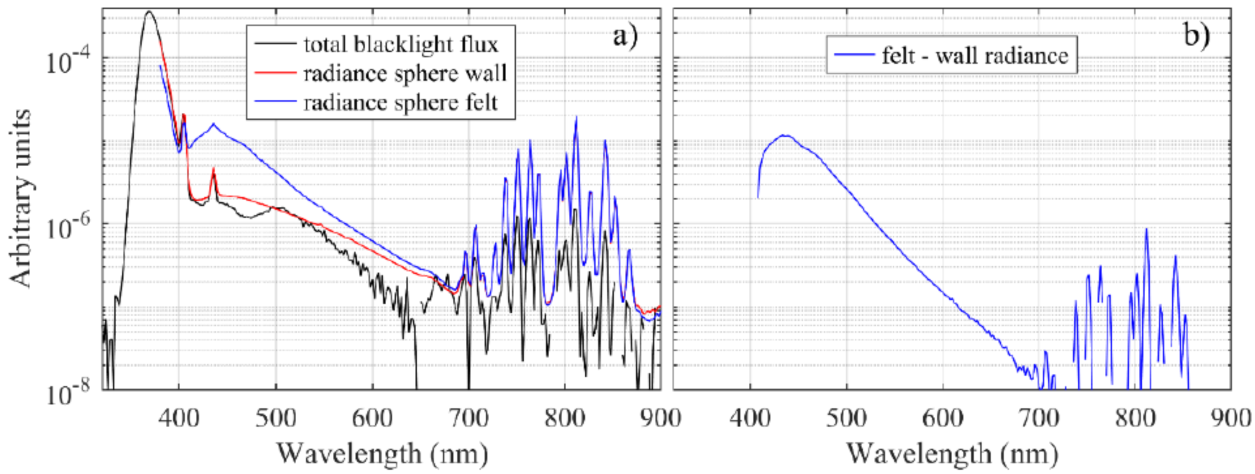

Figure 2. Comparison of blacklight spectra measured as total flux, radiance on the sphere wall or only on the felt (a). Difference between the radiance on the felt and on the wall (b).

The relative contribution of the felt to the integral flux is d/D, with d being the felt width and D the sphere diameter. In our case, d = 6 mm and D = 3 m enable a d/D = 0.2% felt contribution, which is borderline negligible. For smaller spheres such effect may become important.

For further information, contact Liviu Ivanescu (liviu.ivanescu@nrc-cnrc.gc.ca).

Standoff Detection of Chemical Residues Using Quantum Cascade Lasers

Improvements in tunable quantum cascade lasers (QCLs) have had a disruptive influence in the infrared (IR) spectroscopy of molecules. Since first demonstrated thirty years ago, mid-infrared QCLs have improved greatly in output power, operating temperature, and spectral range. These features have enabled the development of many vapor phase sensors. However, there is also a need for the remote detection of liquid and solid chemicals attached to surfaces. Standoff tunable laser spectroscopy has the potential of being an efficient way to perform such detection. In this approach, the backscattered laser intensity from a target surface is evaluated to obtain the spectra of materials in the field. Such a detection scheme is illustrated in Figure 1.

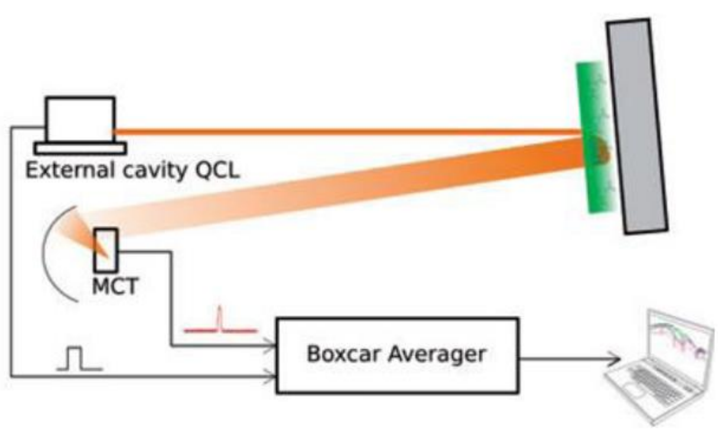

Figure 1. Basic scheme for standoff detection using a QCL.

At NRCC we have developed the standoff detection apparatus shown in Figure 2 by deploying two first generation QCLs.

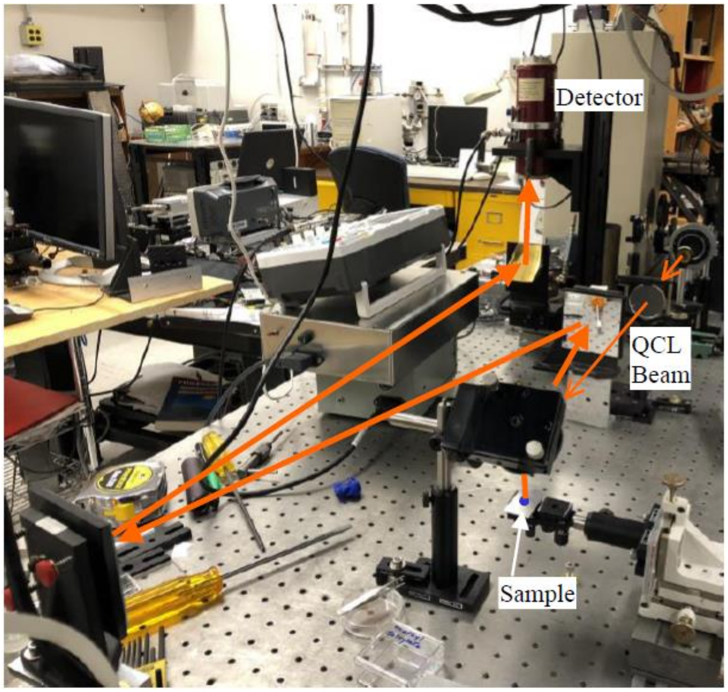

Figure 2. Standoff apparatus at NRCC using a QCL (1075-1250 or 1550 –1685 cm^{-1}) and a mercury cadmium telluride (MCT) detector.

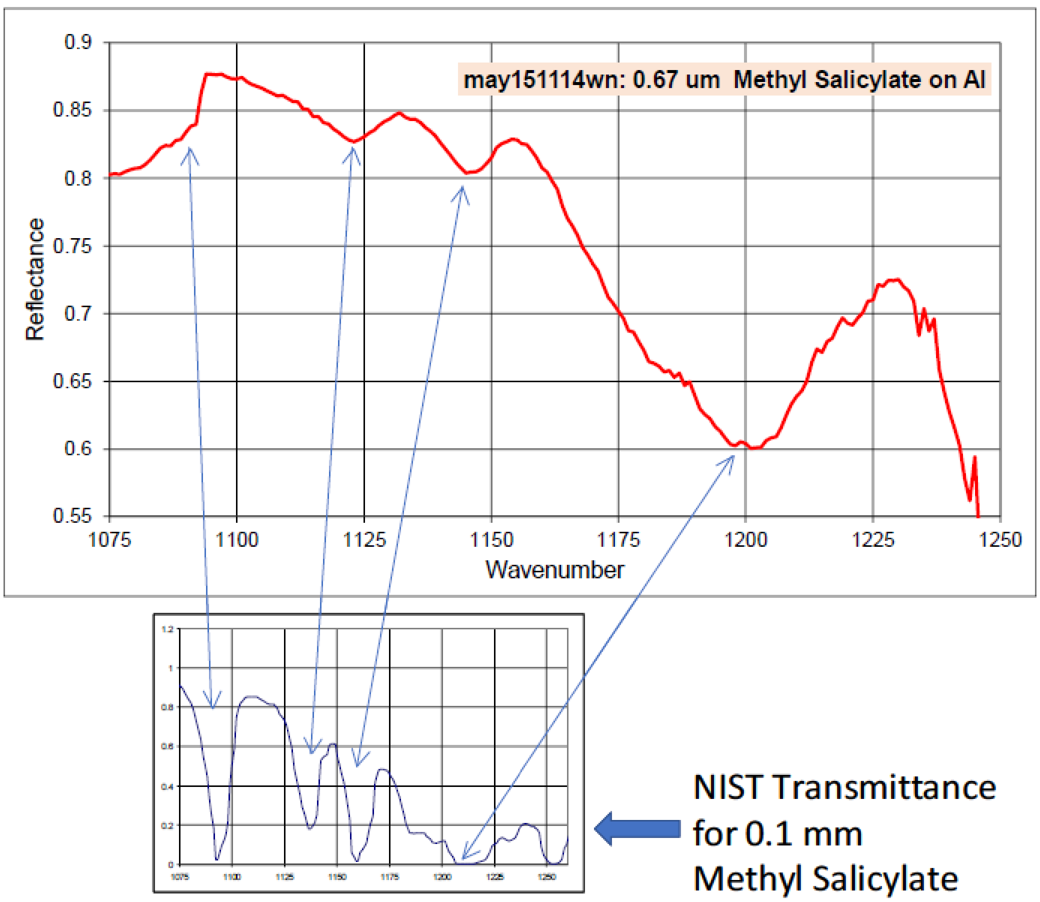

Figure 3. Relative reflectance spectrum of a methyl salicylate film on an Al substrate compared with the transmittance spectrum for the film material in the NIST database.

The chemical residue that we investigated was a film of methyl salicylate (MS), which was dropped on to various substrates, starting with aluminum. The relative reflectance spectrum obtained is shown as the red trace in Figure 3, where it is compared with the NIST database transmittance spectrum to estimate the thickness of the present film (670 nm).

As a variety of substrates – from low reflectance to high – can be expected in the field, simulation software was developed in the IGOR environment for generalized reflectance situations (W.N. Hansen, *J. Opt. Soc. Am.* 58:380, 1968), with the result for MS on a highly reflective substrate (Al) shown in Figure 4 for a low reflectance substrate in Figure 5. In Figure 4 we see that increasing the thickness of MS increases the depth below 100% of the absorption minima for the MS molecule's vibrational modes.

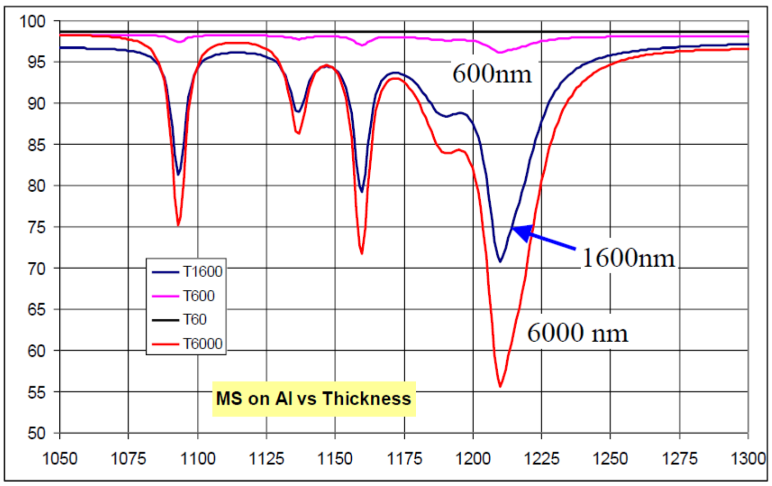

Figure 4. Calculated per cent reflectance for methyl salicylate layers of various thicknesses for an Al substrate.

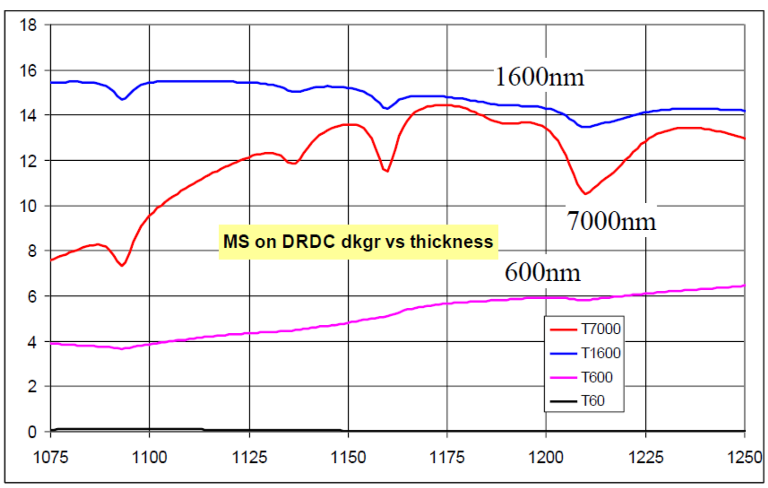

Figure 5. Calculated reflectance spectra for MS layers on a substrate of low reflectance.

The situation for a substrate of low reflectance (less than 0.1% reflectance) is more like that of a free standing film in which internal interference becomes a significant effect, as shown in Figure 5. There we see that a MS layer actually increases up to a point the background reflectance with increasing layer thickness for the layered system. But the background is significantly affected by the film interference effect. The depths of the molecular absorption minima are, however, more correlated with film thickness as can be seen in Figure 5.

From these calculations we see how strongly the substrate properties affect the overall reflectance of the system, effects which have been observed in the experimental results obtained in the standoff experiments for a variety of substrate types.

Veitch Named Fellow of the Royal Society of Canada

Dr. Jennifer Veitch was elected as a Fellow of the Royal Society of Canada for her more than 3 decades of ground-breaking lighting research. "I am humbled and delighted to be invited to join a society whose members I have looked up to for so many years," says Dr. Veitch. "To be recognized as one of these leaders is a great honour, but it also carries a great responsibility to contribute to creating a better future, in Canada and around the world."

When she joined the lighting group of the NRC's Construction Research Centre (formerly the Institute for Research in Construction) in 1992, there was no accepted framework for studying lighting quality and its psychological impact. In the mid-1990s, Dr. Veitch was part of the team that built the NRC's indoor environment research facility. The facility was created to support research that studies how people interact with different environmental conditions and technologies, also known as human factors. The first research conducted in the facility was the lighting experiments that started the sequence of research that Dr. Veitch is now being recognized for by the Royal Society of Canada. The research allowed her and her team to assess the physical impact that lighting had on an employee, as if they were sitting in a cubicle in a real office setting. This pioneering research demonstrated, for the first time, that better indoor lighting could increase employee well-being and productivity while being more energy efficient.

"The NRC has unique facilities and people without which our work could not have been conducted," she says. "We probably would not have been able to do the field work first without the credibility we built by refining our ideas within the laboratory." This study changed the field of lighting research and created the foundation for a globally accepted framework that was adopted by international lighting associations, including the International Commission on Lighting (CIE), where she is currently president. "We aspired to have a significant impact on the field," Dr. Veitch says. "It took the combined effort, over years, of many people to have that influence. My former colleague Dr. Guy Newsham and I worked together on many of the key publications, and we both served on the committees where this work was taken up."

Now, Dr. Veitch is part of the human–building interaction team at the building performance and quality research unit within the NRC's Construction Research Centre. As part of this team, she researches the full psychological impact of indoor environments, including acoustics and air quality. She has provided some of the first evidence that low-energy green buildings have psychological benefits for their occupants. "As a Fellow of the Royal Society of Canada, my long-term goal is to contribute to the better use of psychological science in decision-making and policy, particularly with respect to climate change," she says. "Our choices about what, how and when to light influence not only human well-being and functioning but also the natural world, the visibility of the night sky and the energy we consume to produce that light."

Source: media@nrc-cnrc.gc.ca

ARTHUR WILLIAM SPRINGSTEEN: A BEACON IN THE WORLD OF SPECTROSCOPY

Written by Dr. Jerome Workman, *Spectroscopy* and Used with Permission
Original at: https://www.spectroscopyonline.com/view/arthur-william-springsteen-a-beacon-in-the-world-of-spectroscopy

Arthur William Springsteen, a luminary in the field of spectroscopy, died on May 28, 2024. His contributions to spectroscopic standards were unparalleled, making him a revered figure in this complex and often enigmatic domain. Springsteen was known for his expertise in fluorescence; and multiple angle, diffuse, and specular reflection (or reflectance) and transmission (or transmittance), making him one of the major living authorities on spectroscopic standards. His passing has left a significant void in the scientific community, as he was not only a brilliant scientist but also a loyal, friendly, and ethical individual. His legacy continues to inspire young scientists, who now will have to stand on his technically broad shoulders.

Born on October 30, 1948, in Milford, Connecticut, Springsteen was the only son of Stanley and Catherine (Schatz) Springsteen. His early years were shaped by his father's career in the Navy, leading to numerous relocations along the East Coast, including a two-year stint at Naval Station Guantanamo Bay in Cuba. Springsteen was active in sports from a young age, excelling in baseball and golf. He graduated from Milford Academy and earned a baseball scholarship to Saint Francis University, where he graduated with a degree in chemistry in 1970. During his college years, Springsteen played four years of varsity golf, achieving a winning record each year. In recognition of his achievements, he received the Distinguished Alumnus in Science Award from Saint Francis University in 2015.

He pursued further studies in chemistry, obtaining a Master of Science degree from Marshall University and a Ph.D. in Chemistry from West Virginia University. His postdoctoral research in organic chemistry at WVU included setting a course record at the university's golf course, a record that remained unchallenged after the course was dismantled for new construction. Upon moving to New Hampshire after graduation, he briefly served as an adjunct professor of chemistry, volunteer assistant basketball coach, and volunteer Sports Information Director at Colby-Sawyer College. He also worked as the golf pro at Kearsarge Valley Country Club when it was owned by the college.

At the time of his death, Springsteen had recently retired as the President and Chief Technical Officer of Avian Technologies, LLC, a company he founded in 1999. Before this, he spent 13 years at Labsphere, Inc. as Principal Scientist and Director of Advanced Development. During his tenure at Labsphere, he developed over thirty commercial products, including the renowned Spectralon diffuse reflectance material product line, various optical coatings, fluorescent materials, and accessories for measuring reflectance, diffuse transmittance, and fluorescence. He held nine U.S. patents and three European patents on materials and instrument design, winning the 1990 Photonics Spectra New Product of the Year award for Optical Grade Spectralon and sharing another in 1997 for the Labsphere bispectral fluorescence colorimeter.

Springsteen's prolific scientific output included over 30 published papers and numerous contributions to Spectroscopy magazine's "Spectroscopy Workbench" section. He co-authored "Applied Spectroscopy: A Complete Guide for Practitioners" with Jerry Workman and edited the proceedings of the Third and Fourth Oxford Conferences on Spectrometry. He was deeply involved in the scientific community, serving as Secretary of the Council for Optical Radiation Measurement (CORM), a board member of the Inter Society Color Council (ISCC), and a member of the National Research Council (NRC) of the U.S. He actively participated in ASTM Committees E-12 (Color and Appearance) and Committee E-13 (Molecular Spectroscopy and Separation Science), the Society for Applied Spectroscopy (SAS), and the Council for Near-Infrared Spectroscopy (CNIRS). Recently, he worked with NASA, the Neils Bohr Institute, and Lucideon Ltd. to develop color standards for calibrating the cameras of the Mars 2020 Perseverance Rover.

Springsteen maintained his passion for golf and baseball throughout his life. He served on the Board of the John Cain Golf Course in Newport and became a minority owner of the Newport Golf Club. He won several club championships and was a member of the Society for American Baseball Research. Springsteen's technical contributions (1–14) have had a lasting impact on optical measurements and standards, particularly in diffuse reflectance and color measurement. His work has provided foundational tools and methodologies essential to analytical chemistry and spectroscopy. His enduring legacy in the scientific community is marked by his profound expertise, innovative spirit, and unwavering commitment to excellence.

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THE LUMEN IS NEARLY 100 YEARS OLD; ITS LIFE MAY BE LIMITED

Background

The system for the physical measurement of light, photometry, rests upon a function that defines the relative spectral luminous efficiency of the human eye to optical radiation. This function, known as V_λ, was standardized by the Commission Internationale de L'Eclairage (CIE) in 1924. By agreement with the International Committee for Weights and Measures (CIPM), the CIE is responsible for the maintenance of such spectral sensitivity functions, whereas the CIPM defines the SI photometric (and other) units. In this way the two organizations work together to establish the traceable international system for the measurement of light.

V_λ was derived from a series of brightness matching experiments involving a small number of participants, as was usual in the early part of the 20th century. It is known to have some errors, particularly in the short wavelengths (the 'blue' part of the visible spectrum) Although a few alternative or additional functions have been proposed and adopted over the years, V_λ is used today in its original form. The convenience of a single, internationally recognized unit by which to quantify light far outweighed the fact that it didn't precisely match the spectral sensitivity of an individual observer. V_λ is the basis for realizing the SI base unit in photometry, the candela, and the candela in turn is the basis for the SI derived unit for luminous flux, the lumen. The lumen and quantities derived from it are the most-used quantities in the measurement of light.

In spite of its nearly universal use in commerce and industry, V_λ has been criticized by some for not more accurately representing typical human visual sensitivity. It is a consensus standard (it is a "smoothed" function of psychophysical data from multiple studies) rather than being derived from more fundamental physiological elements of the visual system. The more recent availability of functions that define the sensitivity of the retinal photoreceptive cells responsible for detail and color vision, the cones, has prompted some scientists to call for a retirement of V_λ and its replacement with a system based on retinal cone fundamentals. The CIE and the International Committee for Weights and Measures (CIPM) are in early stages of discussing the merits of this proposal.

So, What's the Big Deal?

If V_λ were to be retired or redefined, virtually every existing light meter would be obsolete, building codes that specify lighting efficacy in lumens/watt would need to be rewritten, all lighting equipment would need to be re-tested, all lighting packaging would need to be reprinted, and textbooks and guides would need to be revised. New installations and renovations would be labelled differently than existing fixtures, often needing to co-exist with current equipment. Specifications would need to be revised to reflect the new definition. Billions of dollars would be required to convert to a new definition.

Who Will Decide?

Under the current international system, the CIE is responsible for defining spectral luminous efficiency functions that are the basis for realizing photometric units. The CIE is composed of 36 National Committees who make up the General Assembly and who vote on all new or revised International Standards and other technical documents. Each country with a National Committee gets a vote. In practice, CIE Technical Committees (TC), made up of representatives from the

National Committees and Associate Members, evaluate, discuss, debate and vote on proposed Standards which, if approved at the TC level, are then forwarded to the CIE National Committees for final possible adoption.

But We Have a Problem

CIE is funded by dues assessed to each National Committee (NC). The amount of the dues is not uniform, but is based on a United Nations coefficient that reflects the GNP of the country. Accordingly, the USNC is assessed more than any other NC (about $36,000/year from 2024). Furthermore, while most other NCs are funded by their governments or large industry organizations, the USNC must raise our funds from voluntary contributions by companies, laboratories, small manufacturers, and individual members. Changes in the lighting industry in the past 10 years have significantly reduced our income to the degree that we have not been able to fully pay our CIE dues. As a result, we have recently been suspended by CIE which means we cannot vote on any matters and have only Observer status in General Assembly meetings.

Why Should I Care?

You are receiving this communication because you have a vested interest in ensuring that the positions of the United States' lighting communities are represented on critical matters at the international level. The USNC provides that representation. We cannot vote unless we resolve our dues issues with the CIE, and you are part of that solution. We have an immediate need to raise sufficient funds to pay our current assessment and a long-term need to maintain our active status. The USNC is a volunteer organization; we have no paid staff, no physical office and minimal overhead. All travel, both domestic and international, is self-funded by our committed volunteers. Virtually all our income is used to pay our CIE dues.

Our example of the V_λ controversy and its significant consequences for industry, governments, and consumers, is just one of the many issues that affect United States' interests. With increasing international commerce and regulation, it is imperative that our country's priorities and values are represented. Please become part of the solution. If you have questions or concerns, please contact Craig Bernecker at berneckc@newschool.edu.

Authored by Alan Laird Lewis, O.D., Ph.D. for the CIE U.S. National Committee

UPCOMING IES MEETINGS CALENDAR

The Illuminating Engineering Society (IES) is sponsoring the following meetings and conferences in the coming months (specific details are subject to change; please check the links for the latest information):

IES Street and Area Lighting Conference 2024
Atlanta, GA
September 22-25, 2024
https://www.ies.org/events/street-area-lighting-conference/

2024 Aviation Lighting Committee Fall Conference
Charlotte, NC
October 27-November 1, 2024
https://www.ies.org/event/2024-aviation-lighting-committee-fall-conference/

LightFair 2025
Las Vegas, NV
May 4-8, 2025
https://www.lightfair.com

NEWS FROM THE CIE

International Commission on Illumination
Commission Internationale de l'Eclairage
Internationale Beleuchtungskommission

Upcoming Events

CIE Midterm Meeting 2025
Vienna, Austria
July 4-11, 2025
https://cie.co.at/news/cie-midterm-meeting-vienna-austria-2025

31st Quadrennial Session of the CIE
Nanjing, China
July 9-17, 2027
https://cie.co.at/news/31st-quadrennial-session-cie-nanjing-china

Recent CIE Publications

CIE has issued the following publications in 2024:

- CIE 252:2024 Assessment of Discomfort Glare from Daylight in Buildings
- CIE 254:2024 A Roadmap Toward Basing CIE Colorimetry on Cone Fundamentals
- ISO/CIE 11664-5:2024 Colorimetry – Part 5: CIE 1976 L*u*v* Colour Space and u', v' Uniform Chromaticity Scale Diagram
- ISO/CIE DIS 28077(E):2024 Photocarcinogenesis Action Spectrum (Non-Melanoma Skin Cancers)

Visit http://www.cie.co.at for additional information.

Purpose of the Council for Optical Radiation Measurements (CORM)

The Council for Optical Radiation Measurements is a non-profit organization with the following aims:

1. To establish and publish consensus among interested parties on national, industrial and academic requirements for physical standards, calibration services, and inter-laboratory collaboration programs in the fields of optical radiation measurement, including measurement of the transmittance and reflectance properties of materials, measurement of radiant sources, and characterization of optical detectors used for the measurement of these properties.
2. To establish national consensus on the priorities for these requirements.
3. To maintain liaison with the National Institute of Standards and Technology (NIST) and The National Research Council Canada (NRC) and to advise the Institute(s) of requirements and priorities.
4. To cooperate with other organizations, both public and private, to accomplish these objectives for the direct and indirect benefit of the public at large.
5. To assure that information on existing or proposed standards, calibration services, collaboration programs, and its own activities is widely disseminated to interested parties.
6. To answer inquiries about such standards activities or to forward such inquiries to the appropriate agencies.

Optical Radiation News Editorial Policy

Optical Radiation News (ORN) is published semi-annually each year. ORN reports upcoming technical meetings and news from NIST and other national metrology laboratories. News relating to the status and progress in optical radiation metrology from affiliated organizations, including, but not limited to, the *Commission International De Éclairage* (International Commission on Illumination, CIE), Inter-Society Color Council (ISCC), Lamp Testing Engineers Conference (LTEC), etc., is welcome. No commercial advertising, endorsements, or contributions with commercial content are included in ORN. Unsolicited contributions are subject to review and approval by the editor, CORM publications committee, and /or executive board prior to publication. Anonymous contributions will not be accepted. Contact information for a submission is required and will be published. ORN is included free with CORM membership.

Instructions for Contributing Authors

ORN is published in English. Deadlines for submission of News items and announcements concerning optical radiation metrology are 1 March and 1 September. Items may be submitted to the editor in via fax or e-mail attachments in plain ASCII text or common electronic word processing file formats, preferably Microsoft Word® or Corel WordPerfect®. Contributions should be in 12 point Times New Roman font with simple formatting, e.g., the "Normal" style and template in Word. *Use of complex style templates and formatting is strongly discouraged*. Submissions with high quality pertinent electronic graphics are welcome, however digital photographs and graphics will be reproduced in black-and-white or grayscale. Graphics included in hardcopy submissions via fax will not be reproduced. Submissions are credited to organizations, rather than individuals.

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