Rasheed M. A. Azzam, University of New Orleans (UNO), LA, is this year’s recipient of the SPIE G.G. Stokes Award for his career-long work in optical polarization. “I consider it a special honor to receive this award, which is named after the distinguished mathematical physicist George Gabriel Stokes,” Azzam says.

Among Azzam’s many technical accomplishments is the invention of the four-detector photopolarimeter, the commercial version of which won a Photonics Circle of Excellence Award and an R&D 100 Award.

Azzam has also been active with SPIE, the Optical Society of America (OSA), and the Third World Academy of Sciences (TWAS; Trieste, Italy).

Geometrical Elegance

Though his career spans more than 30 years, his interest in optics began earlier, in secondary school. “I was impressed by the elegance of the geometrical laws of reflection and refraction in high school,” Azzam says. “However, my real encounter with optical polarization started in 1969 when I joined what was known then as the Electrical Materials Laboratory at the University of Nebraska-Lincoln [UNL] under the direction of the late Prof. Nicholas M. Bashara.”

Azzam received his PhD from UNL in 1971 and co-authored the monograph *Ellipsometry and Polarized Light* with Bashara in 1977. The book has been translated into several languages and is considered the foremost publication in the field. “I am personally gratified by the favorable reception that this book has had over the years,” Azzam says.

Other career highlights include the development of several new techniques to measure optical polarization and the Jones and Mueller matrices. In his PhD dissertation, Azzam introduced generalized ellipsometry (GE) for systematic Jones-matrix measurement. Since then, GE has been widely used to determine optical properties of anisotropic crystalline materials. He also invented the dual-rotating-retarder Mueller-matrix polarimeter, and contributed to reflection optics and the design of thin-film devices for polarized light.

Outstanding Inventor

In 1985, Azzam published the most papers of his career. “One of those papers, ‘Arrangement of four photodetectors for measurement of the state of polarization of light,’ appeared in *Optics Letters* and created a lot of excitement,” he says. “In this passive and static scheme, three windowless partially reflective silicon photodetectors are set at oblique incidence to steer an incident light beam in a non-planar light path to a fourth [antireflection]-coated detector. The $4 \times 1$ output electrical signal vector of this four-detector photo-polarimeter [FDP] is linearly related to the $4 \times 1$ Stokes vector of incident light by a $4 \times 4$ instrument matrix, which is obtained by calibration.”

The first FDP was built, calibrated, and tested at UNO with support from the National Science Foundation and with the collaboration of Enrico Masetti (Italy) and others. U.S. and international patents were licensed to Gaertner Scientific (Skokie, IL), which manufactures fast kinetic and scanning ellipsometers. Based on the FDP technology, they developed the StokesMeter.

Azzam was named Outstanding American Inventor of 1988 by Intellectual Property Owners Inc. for the invention of the FDP. Gaertner’s commercial version also earned him a Photonics Circle of Excellence Award and an R&D 100 Award in 1993.
Profile continued from page 31

His recent research has focused on spectroscopic ellipsometry (SE) based on prismatic substrates and diffraction gratings. Working in conjunction with Containerless Research Inc. (Evanston, IL), Shankar Krishnan (now with KLA-Tencor, San Jose, CA), and others, Azzam has developed the patented grating-based division-of-amplitude photopolarimeter (G-DOAP) for spectroscopic and time-resolved measurement of polarization and SE.

In addition, Azzam also teaches undergraduate and graduate classes on circuits, electromagnetics, and optics at the University of New Orleans as a distinguished professor of electrical engineering. “I am currently involved with graduate students in the design of beam splitters for DOAP, broadband, and tunable quarter-wave retarders and circular polarization beam splitters for the infrared using total and frustrated total internal reflection,” Azzam explains.

Azzam’s work with the technical community doesn’t end at the lab or in the classroom, however. He is a Fellow of SPIE, the OSA, and the TWAS and has served as editor for OSA journals on topics of polarization as well as editor of SPIE’s Milestone Series volume Selected Papers on Ellipsometry. He has also been a co-organizer, co-chair, and co-editor for several international conferences. In fact he co-chaired two of the earliest SPIE polarization conferences and edited their resulting proceedings—Polarized Light: Instruments, Devices, Applications and Optical Polarimetry: Instrumentation and Applications—in 1976 and 1977.

MEMBER NEWS AND ANNOUNCEMENTS

Election Results for 2006 Officers and Directors

SPIE President Malgorzata Kujawinska announced the SPIE 2005 election results at the Society’s Annual General Meeting in San Diego, CA. Term of office begins 1 January 2006.

Officers Elected for the 2006 Term
2006 President: Paul F. McManamon, Air Force Research Laboratory, USA
President Elect: Brian Culshaw, University of Strathclyde, UK
Vice President: Kevin G. Harding, GE Global Research Center, USA
Secretary/Treasurer: Robert E. Fischer, OPTICS 1, USA

Directors Elected for the 2006–2008 Term
• Kristina M. Johnson, Pratt School of Engineering, Duke University, USA
• Jennifer C. Ricklin, DARPA, USA
• Giancarlo C. Righini, Istituto di Fisica Applicata Nello Carrara, Italy
• Hugo Thienpont, Vrije Universiteit Brussel, Belgium

“I consider it a special honor to receive this award, which is named after the distinguished mathematical physicist George Gabriel Stokes.”

—Rasheed Azzam, 2005 recipient of the G.G. Stokes Award
Reports from the 2005 SPIE Annual General Meeting

Highlights of the most recent meeting of the Society include a healthy financial picture and an account of the President’s travels around the world.

The Annual General Meeting of the Society took place 2 August in San Diego, CA, at the Optics & Photonics 2005 Symposium. Here are reports from the meeting from President Malgorzata Kujawinska, Treasurer Robert E. Fischer, and Executive Director Eugene Arthurs.

President’s Report
SPIE President Malgorzata Kujawinska reported at the 2005 SPIE Annual General Meeting on a variety of subjects. She touched on the different topics covered in her “President’s Letter” columns in oemagazine, such as the International Year of Physics, the need for more European involvement in SPIE, cooperation between societies, student chapters, and the Society’s 50th anniversary.

She also discussed her travels around the world as President and the philosophy behind presidential travel. The reason presidential travel has become more important during the last few years, she says, is not just the increasing worldwide scope of the Society, but also the creation of the presidential advisory committees representing different regions around the world. The President’s travels then support these committees and also give SPIE a “face” and help the Society become better known. Kujawinska says this lends to the maxim of “think globally and work locally.” She then shared photos of her travels and talked about her visits. Locations she visited included multiple stops in places such as India, Mexico, Malaysia, Singapore, Germany, Ukraine, and Russia.

Kujawinska says upcoming challenges include how to approach the new era of the SPIE Digital Library, and how to combine new topics that bridge and exchange information between Eastern and Western Europe.

Treasurer’s Report
SPIE Treasurer Robert E. Fischer reported that the Society is very healthy financially (see table), but that it is important to continually monitor industry activities and our own activities very closely. He pointed out that though the Board of Directors mandated that the Society keep at least six months of liquid reserves, we are currently at 11.5 months worth of liquid reserves.

Executive Director’s Report
SPIE Executive Director Eugene Arthurs provided an overview of the Society’s financial picture, including the exhibition revenue growth, and thanked exhibitors who have supported the Society and made this growth possible.

Arthurs also presented other statistics such as the strengthening of the technical programs, the positive effect of the Internet and the SPIE Digital Library on the growth of SPIE, and the increasing number of journal submissions. Arthurs thanked the staff, the Society’s founders, and the Presidents throughout the years, adding that he’s looking forward to a healthy future.

Members can request the full minutes of this meeting. Contact Bobbie Lively at 360-676-3290, ext. 254, or email her at bobbie@spie.org.

The next meeting of the corporation will occur in conjunction with Optics and Photonics 2006, scheduled for 13–17 August 2006 in San Diego, CA.
SPIE to Launch Two Exciting Publications

The publications will work together to provide the tools you’ll need to excel in your field and in your profession.

Look for the launch of two exciting new SPIE publications in January 2006. SPIE Newsroom, a dynamic news website integrated with spie.org, will cover the latest technical developments in optics and photonics, while SPIE Professional, a quarterly magazine published exclusively for Society members, will feature career trends and insights associated with the optics and photonics profession.

These new projects will replace oemagazine, which will publish its final issue next month. The new publications represent an innovative approach to information, offering content that is more timely and more focused than ever before.

In-depth Technical News

SPIE Newsroom articles will range from industry news to in-depth technical features all based around several technical communities. The communities include Biomedical Optics & Medical Imaging, Lasers & Sources, Nanotechnology, Remote Sensing, Micro/Nanolithography & Fabrication, and Communications & Networking, just to name a few. Each community will have its own front page and set of resources.

An engineer interested in pattern recognition, for example, could sign up for monthly e-alerts from the Electronic Imaging & Signal Processing community and the Defense & Security community. Engineers who want to be notified of new articles more frequently can subscribe to RSS feeds. Robust search capabilities will allow readers to find the articles and content most relevant to their interests.

In addition to near-daily updates, another decided advantage of the new website will be the ability to provide multimedia content such as streaming video and animation. Premium content, such as in-depth tutorials, will be offered, as well.

SPIE Newsroom will provide timely news and information in an online environment, allowing SPIE to exploit the many search, linking, and interactive capabilities of the Internet.

Photonics Professionals

With the new member magazine, SPIE Professional, the Society recognizes that members aren’t just defined by technical community but also by their career roles. A professional may be an entrepreneur, trend watcher, creator, student, educator, employee, manager, or mentor, as well as an SPIE member.

The content provided in SPIE Professional will focus on the profession of optics and photonics and the issues that impact SPIE members working within it.

Look for articles on topics such as continuing education, case studies from photonics entrepreneurs, intellectual property basics, professional ethics, industry trends, and much more.

SPIE Professional will have an online component as well. Members can access even more information to help them in their careers online in a special members-only section.

Stay tuned for more news about SPIE Newsroom and SPIE Professional in the coming months.

SPIE Welcomes These Corporate Members

Affymetrix Inc.
Santa Clara, CA  www.affymetrix.com

Aglitron Inc.
Wilmington, MA  www.aglitron.com

Altos Inc.
Trabuco Canyon, CA
www.altos-inc.com

Apollo Optical Systems LLC
Rochester, NY

Applied Surface Technologies
New Providence, NJ
www.co2clean.com

Archer Optx Inc.
Rowlett, TX  www.archeroptx.com

Ariel Optics Inc.
Ontario, NY  www.arieloptics.com

Asahi Spectra USA Inc.
Torrance, CA  www.asahi-spectra.com

AZ Electronic Materials
USA Corp.
Somerville, NJ  www.az-em.com

Brandstrom Instruments Inc.
Ridgefield, CT
www.brandstrominstruments.com

Brandywine Optics Inc.
West Chester, PA
www.brandywineoptics.com
Correction

In the August 2005 issue, as part of the “50 Years: A Celebration of Membership, Past, Present, and Future” special section, an error was made on page M-11. The fact was omitted that the A.E. Conrady Award is sponsored by Optical Research Associates (ORA; Pasadena, CA). We regret this omission and thank ORA for their generous support of this award.