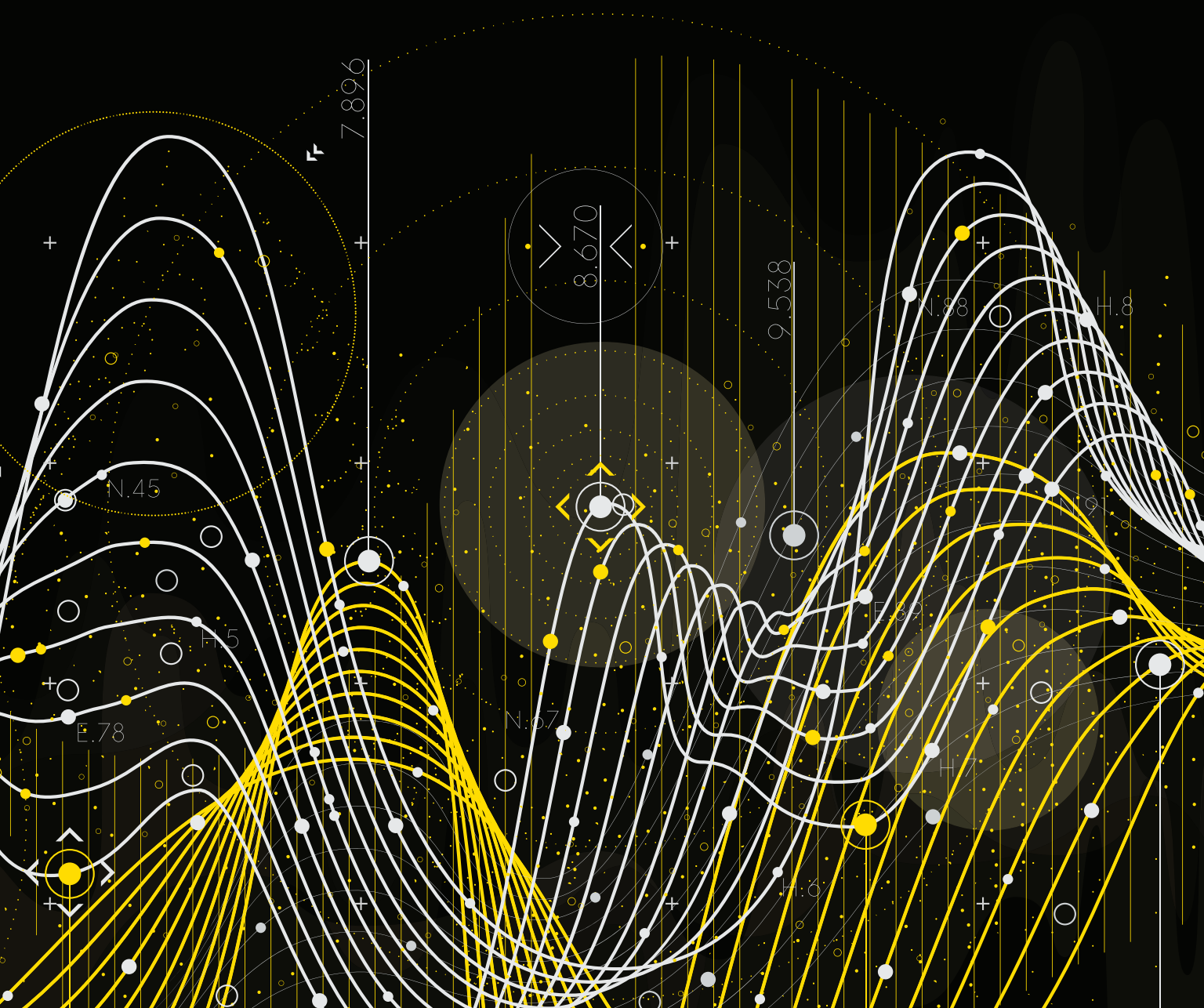


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SPIE is the largest organizer of conferences, workshops, and symposia in the field of optics and photonics with over 300 conferences occurring annually. SPIE Proceedings are the rich outcome of these events, providing you with a snapshot of what is happening—right now.

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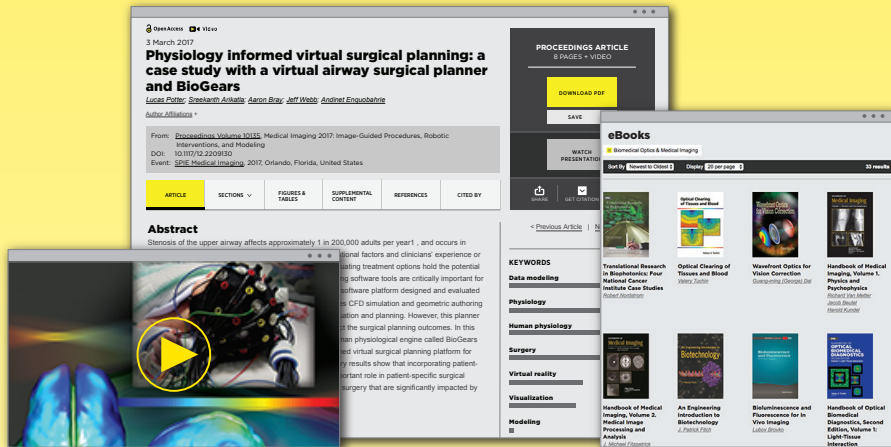
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Site Features

Full-Text HTML: All articles, proceedings papers dating back to 2014, and SPIE Field Guide and Spotlight eBooks are displayed in HTML format in addition to the downloadable PDF format.

Presentation Recordings: Presentation recordings from SPIE conferences are featured on the Conference Presentations page as well as embedded on proceedings article pages and include the following features:  **Presentation + Paper**

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Home Page

- 1 Search** – Perform a basic search using the new SPIE Optics & Photonics taxonomy coupled with semantic technology to return relevant results.
- 2 Personal Account Sign-in** – See page 5 for more information.
- 3 Featured Content** – See the most recently published papers from SPIE Conferences or Journals.

The screenshot shows the SPIE Digital Library home page. At the top, there is a navigation bar with the SPIE logo and links for 'Sign In', 'View Cart', and 'Help'. Below this is a secondary navigation bar with 'SPE. DIGITAL LIBRARY' and menu items for 'CONFERENCE PROCEEDINGS', 'PAPERS', 'PRESENTATIONS', 'JOURNALS', and 'EBOOKS'. A search bar is located on the right side of this bar, with a magnifying glass icon and a '1' callout. The main content area features a large heading: 'SEARCH THE WORLD'S LARGEST COLLECTION OF OPTICS AND PHOTONICS APPLIED RESEARCH'. Below the heading is a search input field with the placeholder text 'Enter Search Term' and a '1' callout. To the right of the input field is a 'SEARCH >' button and a link to 'ADVANCED SEARCH >'. A dropdown arrow is positioned below the search bar. On the left side, there is a 'Newly Published Proceedings' section with four categories: 'SPE. OPTICAL METROLOGY', 'SPE. MICRO TECHNOLOGIES', 'SPE. DEFENSE+ COMMERCIAL SENSING', and 'SPE. ADVANCED LITHOGRAPHY', each with a 'GO >' link. In the center, there is a 'Featured Presentation' section titled 'RADAR RESEARCH AT UNIVERSITY OF OKLAHOMA' with a 'Watch the Video' link. On the right, there is a 'Featured Article' section titled 'AUTOMATIC FISHING NET DETECTION AND RECOGNITION BASED ON OPTICAL GATED VIEWING FOR UNDERWATER OBSTACLE AVOIDANCE' with a 'Read the Article' link. The article image shows a green laser grid and a street scene with a 'Fishing net' and 'Imaging window' labeled.

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Access advanced search by clicking the “Advanced Search” link above the search box on any page.

- 1 Search a combination of keywords, phrases, author names, and publication titles in all fields or limit your search to specific fields.
- 2 Search results can be refined by publication and/or publication date.

The screenshot displays the SPIE Digital Library website with an 'ADVANCED SEARCH' modal open. The modal is divided into three sections:

- KEYWORDS/PHRASES**: This section, highlighted with a pink circle '1', contains three input fields for keywords. Each field is preceded by an 'AND' dropdown menu and followed by an 'in' dropdown menu set to 'All Fields' and a 'Remove' button. Below the fields is a '+ Add another field' link.
- SEARCH IN:**: This section, highlighted with a pink circle '2', allows for refining the search by publication type. It includes checkboxes for 'Proceedings', 'Journals +', and 'eBooks +'. Each checked option has a 'Volume' dropdown menu set to 'All'. The 'Journals +' option also includes 'Issue' and 'Page' dropdown menus.
- PUBLICATION YEARS**: This section allows for filtering by year. It features a 'Range' section with a slider from 1962 to 2017 and a 'Single Year' section with a 'YYYY' input field.

At the bottom of the modal, there is a 'Clear Form' link and a yellow 'SEARCH' button. The background shows the website's navigation bar with 'ADVANCED SEARCH' highlighted by a pink arrow, and a list of top downloads on the left side.

Search Results

The search results page includes powerful new filters to fine-tune the results.

- 1 Search within results and refine your search results.
- 2 Add and remove filters, such as publication type, year, and keywords.
- 3 Sort and display preferences.
- 4 Download PDF or Save to My Library directly from the results page.

The screenshot shows the SPIE Digital Library search results page. At the top, there are navigation links for SPIE Digital Library, SPIE Career Center, and a search bar. The main heading is "SEARCH RESULTS" with 23 results found for "lasers" and "Biochemistry".

Callout 1 points to a "REFINE BY" section on the left, which includes a search box for "Search within results" and filters for PUBLICATION (Proceedings/Presentation, Journal Article, eBook), YEAR (Range, Single Year), and KEYWORDS (Absorption, Luminescence, Spectroscopy).

Callout 2 points to a filter for "2010-2017" and "Absorption".

Callout 3 points to the "Sort By Relevance" and "Display 25 per page" options.

Callout 4 points to the "DOWNLOAD PDF" and "SAVE FOR LATER" buttons for the search results.

The search results list includes:

- Proceedings Article | 10 December 2014
Lidar monitoring of organic matter in the Pearl River Estuary
Peng Chen ; Delu Pan ; Chuanwen Hu ; Zhihua Mao
Proc. SPIE. 9261, Ocean Remote Sensing and Monitoring from Space
KEYWORDS: Absorption, Deconvolution, Fluorometers, Laser induced fluorescence, Laser spectroscopy, LIDAR, Luminescence, Ocean optics, Raman scattering, Spectroscopy
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- Proceedings Article | 25 September 2014 [Open Access](#)
Lidar monitoring of organic matter in the Pearl River estuary (withdrawal notice)
Peng Chen ; Haiqing Huang ; Jianyu Chen ; Delu Pan ; Chuanwen Hu
Proc. SPIE. 9218, Earth Observing Systems XIX
KEYWORDS: Absorption, Deconvolution, Fluorometers, Laser induced fluorescence, Laser spectroscopy, LIDAR, Luminescence, Ocean optics, Raman scattering, Spectroscopy
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Quantum dot optofluidic lasers and their prospects for biochemical sensing
Alper Kiraz ; Qiushu Chen ; Mehdi Aas ; Alexandr Jonáš ; Xudong Fan
Proc. SPIE. 9727, Laser Resonators, Microresonators, and Beam Control XVIII
KEYWORDS: Absorption, Biosensing, Biosensors, Fluorescence resonance energy transfer, Laser damage threshold, Laser resonators, Luminescence, Molecules, Quantum dot lasers, Quantum dots, Resonators, Sensors
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Article Pages

Proceedings and Journal Article pages include:

- 1 New tabs to view the paper in its entirety, jump to a specific section, view only the figures and tables, see supplemental content, find citing articles, or view the references.
- 2 Download a PDF or save the paper for later by adding to My Library, accessed through your personal account.
- 3 Share the paper on popular social media sites or by emailing a link.
- 4 Get citations in popular formats, such as End Note, BibTeX, and others.

The screenshot shows the SPIE Digital Library interface. At the top, there are navigation links for SPIE Digital Library, SPIE Career Center, and optics.org, along with a search bar and user options like Sign In, View Cart, and Help. The main navigation bar includes Conference Proceedings, Papers, Presentations, Journals (highlighted), and Ebooks. The article title is "Estimating index of refraction for specular reflectors using passive polarimetric hyperspectral radiance measurements" by Jacob A. Martin and Kevin C. Gross. The page features a navigation menu with tabs for Article, Sections, Figures & Tables, References, and Cited By. The abstract and introduction are visible. On the right, a sidebar contains a "JOURNAL ARTICLE" section with 8 pages, a "DOWNLOAD PDF" button, a "SAVE TO MY LIBRARY" button, and social media sharing options. Below the sidebar, there are "KEYWORDS" and a list of related terms: Graphene, Resonators, Refractive index, and Cavity resonators. Red callout numbers 1 through 7 are overlaid on the page to highlight specific features: 1 points to the URL, 2 to the Download PDF button, 3 to the Share button, 4 to the Get Citations button, 7 to the Journals navigation tab, and another 1 to the Article navigation tab.

Article Pages (cont'd.)

- 5 Graphical representation of keywords in the paper showing relative weighting of terms.
- 6 Related Content - Links to other papers that cover similar subject matter.
- 7 Translate articles into 25 languages.

switches, and directional couplers,²³ have been proposed and analyzed numerically and experimentally. Also, ...

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In this study, a wavelength selective structure comprising of two graphene layers, as input and output ports, coupled through a cavity resonator is proposed and analyzed numerically using the finite-difference time-domain (FDTD) method. A midinfrared bandpass filter is achieved, in which the wavelength of the transmission peak is tuned by varying the length of the resonator, the lateral coupling distance between the graphene layers, the dielectric refractive index of the material inside the resonator, and the chemical potential of the graphene layers utilizing appropriate external voltage bias. FDTD simulation results are in good agreement with the theoretical predictions. The simple proposed structures can be easily fabricated to be utilized in compact nanoplasmonic devices and PICs for optical processors and communication systems in the midinfrared region.

The rest of the paper is organized as follows. In Sec. 2, the theory and simulation methods are introduced. In Sec. 3, the results are presented and discussed. The paper is concluded in Sec. 4.

2. Theory and Simulation Method

The schematic view of the proposed basic structure is shown in Fig. 1. Two graphene layers as input and output ports in an antisymmetric configuration are coupled through a cavity resonator. In a practical point of view, the structure should be inserted in a dielectric medium, but for simplicity without limiting the generality, the background index is assumed to be air. The structure is analyzed numerically using the 2-D-FDTD method with a perfectly matched layer absorbing boundary condition around the simulation region. In the simulations, graphene is treated as an ultrathin film. The Kubo formula is used for deriving the surface conductivity (σ_g) of graphene.^{29,30, 31} At room temperature and in the midinfrared spectral range, the chemical potential of graphene is always above half of the photon energy. So the intraband transition dominates, and the interband transition is neglected. Therefore, the overall conductivity is simplified as^{31,32}

Figure 1

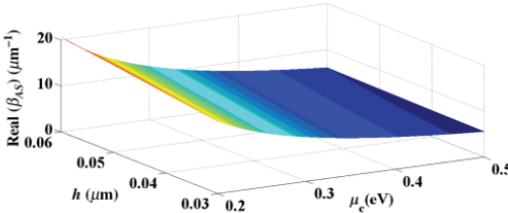


Figure 2

$$\epsilon_{eq} = 2.5 + i \frac{\sigma_g}{\omega \epsilon_0 \Delta}$$

where the thickness of graphene, Δ , is assumed to be 0.5 nm. The surface normal component of permittivity

KEYWORDS

- Graphene
- Resonators
- Refractive index **5**
- Cavity resonators
- Waveguides
- Sensors
- Dielectrics
- Show All Keywords

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Conference Presentation

1

making smart windows smarter:

symbiotic pairing of near-UV solar cells with electrochromic windows for visible light + heat management in architectural applications

yueh-lin (lynn) theodora d. '78 & william h. walton III '74 professor in engineering andlinger center for energy and the environmental chemical & biological engineering department www.princeton.edu/~looloo @looloo

2

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Range: 1962 - 2017

Single Year: YYYY

CONFERENCE NAME

Photonics West (3,293)

Plenaries & Keynotes

<p style="font-size: 0.8em; margin: 0;">MEMS microphone innovations towards high signal to noise ratios (Conference Presentation) (Plenary Presentation) 16 June 2017</p>	<p style="font-size: 0.8em; margin: 0;">Smart integrated microsystems: the energy efficiency challenge (Conference Presentation) (Plenary Presentation) 16 June 2017</p>	<p style="font-size: 0.8em; margin: 0;">Research and development program in fiber optic sensors and distributed sensing for high temperature harsh environment energy applications (Conference Presentation) 12 June 2017</p>	<p style="font-size: 0.8em; margin: 0;">Carrier multiplication and charge transport in artificial quantum-dot solids probed by ultrafast photocurrent spectroscopy (Conference Presentation) 7 June 2017</p>
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3

Video (Conference Presentation)

Diffraction Phase Microscopy using LED

lower noise due to common-path and non-coherent source

- Common-Path interferometer
- 660 nm high power LED source
- 3-10 ms exposure time
- Single shot
- 100-330 fps, depends on FOV

Image filtering

Phase imaging

Linear filtering

Diffraction

Heart

Tissues

Microscopy

10

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