
Description: Single-photon generation and detection is at the forefront of modern optical physics research. This book is intended to provide a comprehensive overview of the current status of single-photon techniques and research methods in the spectral region from the visible to the infrared. The use of single photons, produced on demand with well-defined quantum properties, offers an unprecedented set of capabilities that are central to the new area of quantum information and are of revolutionary importance in areas that range from the traditional, such as high sensitivity detection for astronomy, remote sensing, and medical diagnostics, to the exotic, such as secretive surveillance and very long communication links for data transmission on interplanetary missions. The goal of this volume is to provide researchers with a comprehensive overview of the technology and techniques that are available to enable them to better design an experimental plan for its intended purpose. The book will be broken into chapters focused specifically on the development and capabilities of the available detectors and sources to allow a comparative understanding to be developed by the reader along with an idea of how the field is progressing and what can be expected in the near future. Along with this technology, we will include chapters devoted to the applications of this technology, which is in fact much of the driver for its development. This is set to become the go-to reference for this field.

- Covers all the basic aspects needed to perform single-photon experiments and serves as the first reference to any newcomer who would like to produce an experimental design that incorporates the latest techniques.
- Provides a comprehensive overview of the current status of single-photon techniques and research methods in the spectral region from the visible to the infrared, thus giving broad background that should enable newcomers to the field to make rapid progress in gaining proficiency.
- Written by leading experts in the field, among which, the leading Editor is recognized as having laid down the roadmap, thus providing the reader with an authenticated and reliable source.

Contents:

Part I 1 Introduction and history, Migdall, Cova, Polyakov and Fan
2 Photon statistics, measurements, and measurement tools, Stevens and Nam
Part II 3 Photomultipliers, Kune and Fatlowitz
4 Semiconductor-based detectors, Bienfang, Cova, Ghioni and Itzler
5 Novel semiconductor-based detectors, Mirin, Kwiat and Kim
6 Detectors based on thermal effects, Berggren and Nam
7 Hybrid detectors, Wong, Walmsley, Degiovanni, Polyakov and Migdall
8 Detector calibration, Polyakov
9 Detection tomography, Zhang, Walmsley, Coldenstrodt-Ronge and Datta
Part III 10 Single-photon sources: dream and reality, Hughes
11 Atomic cascade sources, Aspect and Grangier
12 Parametric down conversion, Christ, White, Fedrizzi, Jennewein, Huebel and Silberhorn
13 Four-wave mixing, Rarity and Kumar
14 Isolated quantum systems; single emitters, Solomon, Kuhn, Lounis, Shields, Roch and Jacques
15 Collectively enhanced Quantum Ensembles, Zhao and Pan

Ordering:
Order Online - [http://www.researchandmarkets.com/reports/2634301/](http://www.researchandmarkets.com/reports/2634301/)

Order by Fax - using the form below

Order by Post - print the order form below and send to

Research and Markets,
Guinness Centre,
Taylors Lane,
Dublin 8,
Ireland.
Fax Order Form
To place an order via fax simply print this form, fill in the information below and fax the completed form to 646-607-1907 (from USA) or +353-1-481-1716 (from Rest of World). If you have any questions please visit
http://www.researchandmarkets.com/contact/

Order Information
Please verify that the product information is correct.

Product Name: Single-Photon Generation and Detection, Vol 45. Experimental Methods in the Physical Sciences
Web Address: http://www.researchandmarkets.com/reports/2634301/
Office Code: SC

Product Format
Please select the product format and quantity you require:

| Quantity | Hard Copy (Hard Back): | USD 214 + USD 31 Shipping/Handling |

* Shipping/Handling is only charged once per order.
* The price quoted above is only valid for 30 days. Please submit your order within that time frame to avail of this price as all prices are subject to change.

Contact Information
Please enter all the information below in BLOCK CAPITALS

<table>
<thead>
<tr>
<th>Title:</th>
<th>Mr ☐</th>
<th>Mrs ☐</th>
<th>Dr ☐</th>
<th>Miss ☐</th>
<th>Ms ☐</th>
<th>Prof ☐</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Name:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Email Address: *</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Job Title:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organisation:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Address:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>City:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Postal / Zip Code:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Country:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phone Number:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fax Number:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Please refrain from using free email accounts when ordering (e.g. Yahoo, Hotmail, AOL)
Payment Information

Please indicate the payment method you would like to use by selecting the appropriate box.

☐ Pay by credit card: You will receive an email with a link to a secure webpage to enter your credit card details.

☐ Pay by check: Please post the check, accompanied by this form, to:

Research and Markets,
Guinness Center,
Taylors Lane,
Dublin 8,
Ireland.

☐ Pay by Wire Transfer: Bank details will be provided on the invoice which you will receive after you place your order with us.

If you have a Marketing Code please enter it below:

Marketing Code: _____________________________

Please note that by ordering from Research and Markets you are agreeing to our Terms and Conditions at http://www.researchandmarkets.com/info/terms.asp

Please fax this form to:

(646) 607-1907 or (646) 964-6609 - From USA
+353-1-481-1716 or +353-1-653-1571 - From Rest of World