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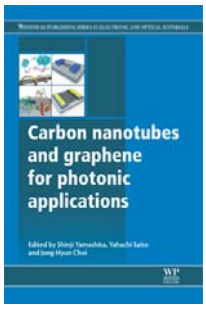
Carbon nanotubes and graphene for photonic applications



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- covers the properties and fabrication of carbon nanotubes and graphene for photonic applications
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The optical properties of carbon nanotubes and graphene make them potentially suitable for a variety of photonic applications. *Carbon nanotubes and graphene for photonic applications* explores the properties of these exciting materials and their use across a variety of applications.

Part one introduces the fundamental optical properties of carbon nanotubes and graphene before exploring how carbon nanotubes and graphene are synthesised. A further chapter focusses on nonlinearity enhancement and novel preparation approaches for carbon nanotube and graphene photonic devices. Chapters in part two discuss carbon nanotubes and graphene for laser applications and highlight optical gain and lasing in carbon nanotubes, carbon nanotube and graphene-based fiber lasers, carbon-nanotube-based bulk solid-state lasers, electromagnetic nonlinearities in graphene, and carbon nanotube-based nonlinear photonic devices. Finally, part three focusses on carbon-based optoelectronics and includes chapters on carbon nanotube solar cells, a carbon nanotube-based optical platform for biomolecular detection, hybrid carbon nanotube-liquid crystal nanophotonic devices, and quantum light sources based on individual carbon nanotubes.

Carbon nanotubes and graphene for photonic applications is a technical resource for materials scientists, electrical engineers working in the photonics and optoelectronics industry and academics and researchers interested in the field.

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Contents

Carbon nanotube solar cells
B A Baker, H Zhang, T-G Cha and Jong Hyun Choi, Purdue University, USA
- Introduction
- Optoelectronic properties of carbon nanotubes
- Scope of the study
- Carbon nanotubes in solid state bulk heterojunction polymer solar cells
- Carbon nanotubes in liquid phase photoelectrochemical cells: donor–acceptor hybrids
- Single-walled carbon nanotubes (SWCNTs) in photoactive layer of dye sensitized solar cells
- Carbon nanotubes as electrode materials in photovoltaic devices
- Developing technologies
- Conclusion and future trends
- Acknowledgement
- References

A carbon nanotube-based optical platform for biomolecular detection
J Pan, T-G Cha, H Chen, and Jong Hyun Choi, Purdue University, USA
- Introduction
- Optical sensing mechanism
- Carbon nanotube-based optical sensors for chemical and biological molecules
- Advanced optical sensing applications
- Conclusion
- Acknowledgement
- References

Carbon nanotube-based photovoltaic and light-emitting diodes
L-M Peng, S Wang and Z Zhang, Peking University, China
- Introduction to carbon nanotube (CNT) diodes
- Doping-free fabrication and characteristics of CNT diodes
- Performance and optimization of CNT photovoltaic diodes
- Photovoltage multiplication in CNT diodes
- CNT-based light-emitting diodes
- Conclusion and future trends
- Acknowledgements
- References

Hybrid carbon nanotube-liquid crystal nanophotonic devices
T Wilkinson and H Butt, University of Cambridge, UK
- Introduction
- Uniform patterned growth of multiwall carbon nanotubes (MWCNTs)
- Simple optics of nematic liquid crystals
- Carbon nanotubes as electrode structures
- Reconfigurable microlens arrays
- Transparent nanophotonic devices
- Photonic bandgap structures using MWCNTs
- Towards photonic metamaterials
- Conclusion
- References

Quantum light sources based on individual carbon nanotubes
W Walden-Newman and S Strauf, Stevens Institute of Technology, USA
- Introduction
- Exciton emission from individual single-walled carbon nanotubes (SWCNT)
- Blinking and spectral diffusion phenomena in individual SWCNT
- Techniques to suppress and remove blinking and spectral diffusion
- Quantum light sources based on SWCNTs
- Conclusion and future trends
- Acknowledgement
- References