

# Photonics Meeting 2021 (PM21)

Journal of Physics: Conference Series Volume 2075

Online  
15 – 16 September 2021

ISBN: 978-1-7138-5046-5  
ISSN: 1742-6588

**Printed from e-media with permission by:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571



**Some format issues inherent in the e-media version may also appear in this print version.**

This work is licensed under a Creative Commons Attribution 3.0 International Licence.  
Licence details: <http://creativecommons.org/licenses/by/3.0/>.

No changes have been made to the content of these proceedings. There may be changes to pagination and minor adjustments for aesthetics.

Printed with permission by Curran Associates, Inc. (2023)

For permission requests, please contact the Institute of Physics  
at the address below.

Institute of Physics  
Dirac House, Temple Back  
Bristol BS1 6BE UK

Phone: 44 1 17 929 7481  
Fax: 44 1 17 920 0979

[techtracking@iop.org](mailto:techtracking@iop.org)

**Additional copies of this publication are available from:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571 USA  
Phone: 845-758-0400  
Fax: 845-758-2633  
Email: [curran@proceedings.com](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

# TABLE OF CONTENTS

Preface	
Peer Review Declaration	
Squeezed States Generation In An Array Of Linear And Nonlinear Waveguides .....	1
<i>R Julius, A-b M A Ibrahim, A N Alias, M S A Halim</i>	
On The Detection Of Single-mode Squeezed States In Kerr Nonlinear Coupler .....	6
<i>Mohd Syaifiq M. Hanapi, Abdel-baset M.a. Ibrahim, Rafael Julius</i>	
Copper-based 3d Printer Filament As Passive Q-switcher .....	15
<i>N. N. A. A. N Zain, N. A. H. Jasni, W. M. F. W Nawawi, F. Ahmad</i>	
Silver Nanoparticles Embedded In Polyvinyl Alcohol Based Passive Saturable Absorber .....	21
<i>N N M Rashid, M Q Lokman, N A Nordin, H Yahaya, F Ahmad</i>	
Amplitude Modulator Of Multi-walled Carbon Nanotubes/chitin In The C-band Region .....	25
<i>N H Muhamad Apandi, H Ahmad, M H Ibrahim, F Ahmad</i>	
Liquid-phase Exfoliated Graphene-mos2 Based Saturable Absorber For Q-switched Erbium Doped Fiber Laser.....	29
<i>S. N. M. Halim, N. A. H. Jasni, M.f.m. Taib, W. M. F. W Nawawi, F. Ahmad</i>	
Generation Of Stable Penta-wavelength Ytterbium Doped Fiber Laser By Spatial-mode Beating In 1- $\mu$ m Waveband.....	34
<i>M A Mat Salim, M A Ismail, Saaidal R Azzuhri, M Z A Razak, H Bakhtiar, N. Bidin</i>	
Generation Of Stable Mode-locked Fiber Laser Based Mwcnts In 1.5- $\mu$ m Waveband.....	40
<i>M A Mat Salim, M A Ismail, M Z A Razak, Saaidal R. Azzuhri, H Bakhtiar, N Bidin</i>	
Overview Of Surface Plasmon Resonance Optical Sensors For Covid-19 (sars-cov-2) Detection .....	45
<i>H A Zain, M Batumalay, S W Harun</i>	
Optical Fiber Sensor For Heavy Chemical Detection: An Overview .....	49
<i>Nurul Athirah Mohamad Abdul Ghafar, Arni Munira Markom, Marni Azira Markom, Ahmad Razif Muhammad</i>	
Characterization Of Cost-efficient Opt101 Pin Photodiode As Relative Dosimetry In Diagnostic Radiology: An Iot Application.....	55
<i>Y Md Radzi, M K Zainol, A S A Al Naggar</i>	
Design Of Multiwavelength Edf-raman Lasers Utilizing Mach-zehnder Interferometer .....	59
<i>Nani Fadzlina Naim, Awangku Nur Azree Awang Azlan, Muhammad Faiz Ibrahim, Suzi Seroja Sarnin, Norsuzila Ya'acob, Mohd Saiful Dzulkefly Zan</i>	
The Generation Of Nanosecond Pulses At C-band Region With Titanium Dioxide As A Saturable Absorber .....	64
<i>N Ahmed, S Omar, Nf Zulkipli, Z Jusoh, Ha Rahman, B Musa, Sw Harun</i>	
Investigation On Identification Of Rrim Clone Series Using Various Nir Led Sensor.....	71
<i>N.e. Abdullah, M. S. Baddri, N.k. Madzhi, S.l.m. Hassan, I.s.a. Halim, A.a.a. Rahim</i>	

Random Laser Behavior In Gold-doped Zinc Oxide Nanorods Structures .....	82
<i>Abdullah Taha Ali, W. Maryam, Yu-wei Huang, H.c. Hsu, Naser M. Ahmed, N. Zainal, H. Abu Hassan</i>	
Internet Connectivity: Is Free Space Optics The Solution? .....	87
<i>Ss Rais, H Husni</i>	
A Study Of Optical Micro-bottle Resonator Humidity Sensor .....	91
<i>Ummu Umairah Mohamad Ali, Ahmad Ashadi Johari, Zulzilawati Jusoh, Husna Abdul Rahman, Sulaiman Wadi Harun</i>	
Hafnium Bismuth Erbium Co-doped Fiber Based Dark Pulses Generation With Black Phosphorus As Saturable Absorber .....	97
<i>A Ahmad, M F A Rahman, M A M Johari, A A Latiff, M H Jali, H H M Yusof, X S Cheng, A R Muhammad, S W Harun</i>	
Whispering Gallery Mode Resonance Excitations On A Partially Gold Coated Bottle Microresonator .....	105
<i>Mohd Narizee Mohd Nasir, G S Murugan, M N Zervas</i>	
Q-switched Ytterbium-doped Fibre Laser Using An 8 Cm Long Hafnium Bismuth Erbium Co-doped Fibre Saturable Absorber .....	110
<i>M F A Rahman, P H Reddy, A Ahmad, A A Latiff, M F Baharom, S W Harun</i>	
Optical Microfiber Sensor : A Review.....	115
<i>Mohd Hafiz Jali, Hazli Rafis Abdul Rahim, Md Ashadi Md Johari, Mohamad Faizal Baharom, Aminah Ahmad, Haziezol Helmi Mohd Yusof, Sulaiman Wadi Harun</i>	

**Author Index**