

PHOTONICS RESEARCH LABORATORY ANNUAL REPORT 2014

National Institute of Physics

U.P. – Diliman Campus

MEMBERS

A. Ph.D. Faculty

1. Dr. Percival Almoró
2. Dr. Wilson Garcia
3. Dr. Nathaniel Hermosa II

B. Ph.D. Students

1. Lean Dasallas, 3rd year
2. Timothy Joseph Abregana, 1st year

C. MS Physics Students

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| 1. Joseph De Mesa, 3 rd year | 4. Cherrie May Olaya, 2 nd year |
| 2. Jessa Jayne Miranda, 3 rd year | 5. Nestor Bareza Jr., 1 st year |
| 3. Arriane Lacaba, 2 nd year | 6. Esmerando Escoto, 1 st year |

D. MS MSE Students

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| 1. Annaliza Amo, 3 rd year | 3. Floyd Willis Patricio, 1 st year |
| 2. Mary Ann Calleja, 3 rd year | |

E. BS Applied Physics Students

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| 1. Joshua Immanuel Beringuela, 6 th year | 6. Dylan Salcedo, 4 th year |
| 2. Cristina Manejero, 6 th year | 7. Gerald John Doblado, 3 rd year |
| 3. Einstom Engay, 5 th year | 8. Jenny Lou Sagisi, 3 rd year |
| 4. Roseanne Novesteras, 5 th year | 9. Nina Angelic Zambale, 3 rd year |
| 5. Mario Onglao III, 4 th year | |

F. BS Physics Students

1. Josemaria Grana, 6th year
2. Rommil Emperado, 4th year

STUDENTS GRADUATED (JANUARY-NOVEMBER 2014)

1. Timothy Joseph Abregana, MS Physics, April 2014
Thesis title : “Quantitative evaluation of volume refractive objects using the statistical behaviour of reconstructed wavefronts”
2. Esmerando Escoto, BS Physics (Cum Laude), April 2014
Thesis title : “Mappine of coherence regions from reconstructed phase maps via statistical fringe analysis”
3. Floyd Willis Patricio, BS Applied Physics, April 2014
Thesis title : “Femtosecond pulsed laser deposition of erbium-doped YAG on silicon (100) substrate”

PUBLICATIONS

A. ISI/SCOPUS INDEXED JOURNALS

1. J.P.L. Carpio and P.F. Almero, "Wavefront watermarking of technical and biological samples using digital random phase modulation and phase retrieval," *Journal of Modern Optics* (07 July 2014)
2. E. Escoto, J. Muldera, L. Dasallas, E. Estacio, and P.F. Almero, "Mapping of Temporal Coherence Function for Ultrafast Lasers via Statistical Fringe Analysis of Reconstructed Phase Maps," *Optics Communications* 329, 190-195 (2014)
3. C. Rosales-Guzmán, N. Hermosa, A. Belmonte, J. P. Torres, "Direction-sensitive transverse velocity measurement by phase-modulated structured light beams," *Opt. Lett.* 39, 5415-5418 (2014).
4. M. Calleja, A. Amo, J. Miranda, F. Patricio, W. Garcia, "Femtosecond pulsed laser deposition of graphite on silicon and copper foil," *Journal of Advanced Computational Intelligence and Intelligent Informatics* 18 (5), 764-768 (2014).

B. INTERNATIONAL CONFERENCES

1. A. Amo, J. De Mesa, A. Lacaba, L. Dasallas and W. Garcia, " Structural and morphological properties of Nd:YAG thin films grown on quartz substrate using fs-PLD", Asian Conference on Nanoscience and Nanotechnology AsiaNANO 2014, Jeju Korea, October 2014.
2. M. Calleja, J. Miranda and W. Garcia, "Effects of Post-Annealing Temperature on Graphite Film Fabrication using femtosecond Pulsed Laser Deposition", Asian Conference on Nanoscience and Nanotechnology AsiaNANO 2014, Jeju Korea, October 2014.

C. LOCAL CONFERENCES

1. T. Abregana, P. Almero, "Phase Retrieval Algorithm Using Multiple Phase Diffusers", Proceedings of the 32nd Samahang Pisika ng Pilipinas, (Quezon City, Philippines), October 2014.
2. P. Almero, M. Takeda, Q.D. Pham, D.I. Serrano-Garcia, S. Hasegawa, Y. Hayasaki, T. Yatagai, "Enhanced multiple-plane phase retrieval using spatial light modulator as diffuser", Proceedings of the 32nd Samahang Pisika ng Pilipinas, (Quezon City, Philippines), October 2014.
3. A. Amo, J. De Mesa, A. Lacaba, L. Dasallas and W. Garcia, "Structural and morphological properties of Nd:YAG thin films grown on quartz substrate using fs-PLD", Proceedings of the 32nd Samahang Pisika ng Pilipinas, (Quezon City, Philippines), October 2014.
4. N. Bareza Jr. and N. Hermosa, "Detection of nanocylinder dimensions using sequential spatial mode projection", Proceedings of the 32nd Samahang Pisika ng Pilipinas, (Quezon City, Philippines), October 2014.
5. J. Beringuela, R. Emperado, W. Garcia, J. Miranda, "Spectroscopic DC argon glow discharge experiment for undergraduate physics laboratories", Proceedings of the 32nd Samahang Pisika ng Pilipinas, (Quezon City, Philippines), October 2014.
6. M. Calleja, J. Miranda and W. Garcia, "Effects of Post-Annealing Temperature on Graphite Film Fabrication using femtosecond Pulsed Laser Deposition", Proceedings of the 32nd Samahang Pisika ng Pilipinas, (Quezon City, Philippines), October 2014.

7. L. Dasallas, C. Olaya, W. Garcia, "Laser Focus Spot Measurement in a Titled Geometry Using Optical Fiber - Power Meter System", Proceedings of the 32nd Samahang Pisika ng Pilipinas, (Quezon City, Philippines), October 2014.
8. J. De Mesa, A. Amo, W. Garcia, R. Sarmago, L. Sayson, "Study of morphological properties and elemental micro-composition of ZnO grown by femtosecond pulsed laser deposition", Proceedings of the 32nd Samahang Pisika ng Pilipinas, (Quezon City, Philippines), October 2014.
9. E. Escoto, P. Almoró, "Moiré self-magnification and smoothing using Gaussian filters", Proceedings of the 32nd Samahang Pisika ng Pilipinas, (Quezon City, Philippines), October 2014.
10. J.L.D. Filipinas, P. Almoró, "Quantitative correlation between speckle intensity and phase", Proceedings of the 32nd Samahang Pisika ng Pilipinas, (Quezon City, Philippines), October 2014.
11. A. Lacaba, J. De Mesa, F. Patricio, L. Dasallas, W. Garcia, "Deposition of Nd:YAG on silicon using femtosecond pulsed laser deposition in oxygen background gas", Proceedings of the 32nd Samahang Pisika ng Pilipinas, (Quezon City, Philippines), October 2014.
12. A. Lacaba, L. Dasallas, W. Garcia, "Femtosecond pulsed laser deposition of Nd:YAG on silicon with in-situ and post deposition heat treatment", Proceedings of the 32nd Samahang Pisika ng Pilipinas, (Quezon City, Philippines), October 2014.
13. C. Menejero, P. Almoró, "A wave propagation-based model for diffuse illumination digital shearography", Proceedings of the 32nd Samahang Pisika ng Pilipinas, (Quezon City, Philippines), October 2014.
14. R. Novesteras, P. Almoró "Shower curtain effect: Simulations via wave propagation", Proceedings of the 32nd Samahang Pisika ng Pilipinas, (Quezon City, Philippines), October 2014.
15. C. Olaya, R. Emperado, J. Beringuela, K. Lampa, W. Garcia, "Collisional energy transfer between helium and neon in glow discharge", Proceedings of the 32nd Samahang Pisika ng Pilipinas, (Quezon City, Philippines), October 2014.
16. F. Patricio, M. Calleja, A. Lacaba and W. Garcia, "Structural characterization of 800 mW femtosecond pulsed laser deposited erbium-doped YAG on silicon", Proceedings of the 32nd Samahang Pisika ng Pilipinas, (Quezon City, Philippines), October 2014.
17. J. Sabanal, M. Bondoc, and N. Hermosa, "Bessel-like beams with controllable path", Proceedings of the 32nd Samahang Pisika ng Pilipinas, (Quezon City, Philippines), October 2014.
18. A. Lacaba, L. Dasallas and W. Garcia, "Nd:YAG Thin Film Grown on Silicon by Femtosecond Pulsed Laser Deposition with In-situ and Post Deposition Heat Treatment", 7th IEEE HNICEM/ISCIII/ERDT 2014 Conference, (Palawan, Philippines), November 2014.