

Research Accomplishment Report

Photonics Research Laboratory
National Institute of Physics
(January 1, 2013 – December 31, 2013)

Percival F. Almoró, Ph. D.
Program Coordinator

SUMMARY

Publications in ISI/SCI Journals (2)
Publications in International Conference Proceedings (6)
Publications in Local Conference Proceedings (13)
Participations in Local Science Exhibits and Workshops (4)
List of Graduates (BS: 6)
List of Resident Members (23)
External Collaborators (1)
Awardees (1)

Publications in ISI/SCI Journals (2)

1. F.C.I. Catalan and P.F. Almoró, "Deterministic phase retrieval interferometry," *Opt. Commun.* 294, 73-77 (2013)
2. P.F. Almoró, G. Pedrini, W. Osten, and C.S. Narayanamurthy, "Analysis of Bessel beam propagation in free space using digital holographic microscopy," *Optik – Int. J. Light Electron Opt.* 124 (14), 1882-1885 (2013)

Publications in International Conference Proceedings (6)

1. L.L. Dasallas, A.P. Lacaba, J. C. de Vero, W. O. Garcia, "Pulsed laser deposition of Nd:YAG using femtosecond laser," Japan Soc. Appl. Physics - Optical Society of America Joint Symposia Doshisha University, Kyotanabe City, Kyoto, Japan (September 16 - 19, 2013)
2. E. Escoto, J. Muldera, L. Dasallas, E. Estacio, and P.F. Almoró, "Coherence length measurement for ultra-short laser pulses using digital holography and statistical fringe analysis," *FRINGE 2013: 7th International Workshop on Advanced Optical Imaging and Metrology*, Springer, Nuertingen, Germany (2013)
3. T.J.T. Abregana and P.F. Almoró, "Phase object localization using the statistical behaviour of reconstructed wavefronts," *Proc. The International Conference on Photonics Solutions 2013*, Pattaya, Thailand (2013)
4. J. Vitug, K. Lampa, C. Olaya, J. De Vero, G. Santos, R. Sarmago, W. Garcia, "Nanosecond and femtosecond laser deposition of BiSrCaCuO on MgO," *Proc. SPIE International Conference of Photonics Solutions*, 8883, 888308, Thailand (2013)
5. A. Lacaba, L. Dasallas, F. Patricio, W. Garcia, "Growth of Nd:YAG thin films on Silicon (111) substrate using femtosecond pulsed laser deposition," *Proc. SPIE International Conference of Photonics Solutions*, 8883, 888309, Thailand (2013)
6. M.A.C Calleja, A.M. Amo, J.J.C Miranda, F.W. I. Patricio, W. O. and Garcia, "Femtosecond pulsed laser deposition of graphite on silicon and copper foil," *Proc. 6th*

International Conference on Humanoid, Nanotechnology, Information Technology, Communication and Control, Environment, and Management (HNICEM), (2013)

Publications in Local Conference Proceedings (13)

1. A.M.S. Maallo and P.F. Almoró, "Wavefront reconstruction with denoising using lateral displacements of a random phase mask," Proc. 31st SPP Physics Cong., SPP2013-2B-1 (2013)
2. J.P.L. Carpio and P.F. Almoró, "Digital watermarking of retrieved phase maps," Proc. 31st SPP Physics Cong., SPP2013-4B-2 (2013)
3. E.R. Escoto, J. Muldera, L. Dasallas, E. Estacio, and P.F. Almoró, "Isolation of coherence regions using digital holography and statistical fringe analysis," Proc. 31st SPP Physics Cong., SPP2013-2B-7 (2013)
4. M.X.V. Tarcelo and P.F. Almoró, "Dynamic Referencing in Pinhole Scanning Phase Retrieval," Proc. 31st SPP Physics Cong., SPP2013-PA-24 (2013)
5. T.J. Abregana and P.F. Almoró, "Thickness evaluation for volume refractive objects using phase maps and statistics-based localization," Proc. 31st SPP Physics Cong., SPP2013-PB-23 (2013)
6. C.M.M. Olaya and W. Garcia, "Analysis of laser crystals through transmission and fluorescence spectroscopy with LEDs, laser diodes and lamps as excitation sources," Proc. 31st SPP Physics Cong., SPP2013-1A-2 (2013)
7. J.J.C. Miranda, C.M.M. Olaya, L. Dasallas, and W. Garcia, "Spectroscopic analysis of femtosecond pulsed laser-induced graphite plasma plume," Proc. 31st SPP Physics Cong., SPP2013-PB-27 (2013)
8. A.P. Lacaba and W. Garcia, "Surface topographical properties of Nd:YAG thin films on silicon (111) substrate grown by femtosecond pulsed laser deposition," Proc. 31st SPP Physics Cong., SPP2013-5A-1 (2013)
9. K.I.A. Lampa, J. Beringuela, and W. Garcia, "Demonstration of Collisional Energy Transfer in He-Ne Glow Discharges through Optical Emission Spectroscopy," Proc. 31st SPP Physics Cong., SPP2013-PA-26 (2013)
10. F.W.I. Patricio, M.A. Calleja, A.P. Lacaba, and W. Garcia, "Structural and morphological characterization of femtosecond pulsed laser deposited Er:YAG on Silicon substrate," Proc. 31st SPP Physics Cong., SPP2013-4A-6 (2013)
11. J. Abrenica, M. Cainglet, P.M. Calaque, H.M. Miguel, J.N. Barce, J. Garcia III, M.A. Calleja, and A. Somintac, "Investigation of different Dopants for ZnO thin films for future Optoelectronics Applications," Proc. 31st SPP Physics Cong., SPP2013-2A-5 (2013)
12. EA. Mondarte, J. Abrenica, HM. Miguel, PM. Calaque, A.M. Amo, J. Balanay, RB. Cervera, A. Salvador, A. Somintac " N-doped and Al-Doped ZnO Thin Films as Thermoelectric Harvesters," Proc. 31st SPP Physics Cong., SPP2013-3A-5 (2013)
13. F.C.I. Catalan, A.M.S. Maallo, and P.F. Almoró, "Holograms for the Investigations of 3-D objects, Compressive Stress Loading and Sub-Surface Defects," 80th Nat'l Res. Coun. Phil. (NRCP) Gen. Mem. Assembly, Manila (March 13, 2013)

Participations in Local Science Workshops/ Extension Work (4)

1. P. F. Almoró, "Writing Scientific Articles and Scientific Mentoring and Formation of Research Groups," Regional Training Workshop on Research Upgrading and

- Performance Evaluation, Hotel Casablanca, Legaspi City (December 17, 18, 2013) (Invited speaker)
2. P. F. Almoró, "Writing Scientific Articles and Scientific Mentoring and Formation of Research Groups," Regional Training Workshop on Research Upgrading and Performance Evaluation, Mariano Marcos State University, Batac, Ilocos Norte (October 16, 2013) (Invited speaker)
 3. P. F. Almoró, "Scientific Mentoring and Formation of Research Groups," Regional Training Workshop on Research Upgrading and Performance Evaluation, Pinnacle Hotel, Davao City (August 14, 15, 2013) (Invited speaker)
 4. P. F. Almoró, "Scientific Mentoring and Formation of Research Groups," Regional Training Workshop on Research Upgrading and Performance Evaluation, DOST Region 7 Building, Cebu City (June 4, 5, 2013) (Invited speaker)

List of Graduates (Bachelor of Science in Physics / Applied Physics (6))

1. Krizia Isabel A. Lampa
Thesis title: Energy transfer mechanism and plasma parameters of helium, neon and helium-neon glow discharges through optical emission spectroscopy (Date defended: April 1, 2013)
2. Mark Ashley D. dela Rosa
Thesis title: LED-based time-resolved fluorescence spectroscopy for lifetime measurement of Rhodamine B (Date defended: April 1, 2013)
3. Rommel Bartolome
Thesis title: Digital In-Line Holography: Theory, Simulations and Applications (Date defended: April 1, 2013)
4. Charmaine Rose Delos Reyes
Thesis title: Evaluation of Optical Vortex Displacement in Transparent Samples using a Statistical Algorithm (Date defended: April 1, 2013)
5. Justine Patricia Carpio
Digital Watermarking of Reconstructed Wavefronts via Multiple-Plane Phase Retrieval Technique (Date defended: October 5, 2013)
6. Mark Xavier Tarcelo
Thesis title: Pinhole Phase Retrieval and Dynamic Referencing (Date defended: October 5, 2013)

List of Resident Members (23)

Faculty Members (5)

1. Percival F. Almoró, Ph. D.
2. Wilson O. Garcia, Ph. D.
3. Anne Margarete Maallo, M. Sc.
4. Arriane P. Lacaba
5. Cherrie Olaya

REPS (1)

1. Lean L. Dasallas, M. Sc.

Student Members (15)

1. Timothy Joseph Abregana
2. Jessa Jayne C. Miranda

3. Joshua Beringuela
4. Esmerando Escoto
5. Josemaria Grana
6. Cristina Manejero
7. Floyd Patricio
8. Annaliza Amo
9. Mary Anne Calleja
10. Joseph A. de Mesa
11. Roseanne Novesteras
12. Einstom Engay
13. Rommil Emperado
14. Mario Juvenal S. Onglao III
15. Dylan Nicolas Emmanuel V. Salcedo

Affiliated Members (2)

1. Francesca Celine Catalan, Ph.D.
2. Justine Patricia Carpio

External Collaborators (1)

Vermén M. Verallo-Rowell, M.D.
Program Director
VMV Skin Research Centre + Clinics
The Centre for Skin Research, Testing, and Product Development, Inc.

Awardees (1)

1. Percival F. Almoró, Ph.D.
Scientist I
UP Scientific Productivity System (2012-2014)