

# CURRICULUM VITAE

## DR. ANWAR HUSSAIN



### PERSONAL INFORMATION:

Name: Dr. Anwar Hussain  
Date of Birth: April 16<sup>th</sup>, 1983  
Nationality: Pakistani  
Contact Address: Department of Physics, COMSATS Institute of Information Technology, Park Road, Chak Shahzad, Islamabad Pakistan  
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### PROFESSIONAL EXPERIENCE

2013 to 2016 Assistant Professor  
Optics Group, Department of Physics, COMSATS Institute of Information Technology, Park Road, Chak Shahzad, Islamabad Pakistan

June 2016 to June 2017 Post doc Zhejiang University China

**Teaching** Laser Physics (Graduate) and Engineering Optics (Under Graduate)

**Research supervision** Supervised MS thesis

### EDUCATION:

2004 B.sc in Physics KUST, Kohat (Pakistan)  
2007 M.sc in Physics Department of Physics, University of Peshawar (Pakistan).  
2013 PhD in Physics Pakistan Institute of Engineering and Applied Sciences (PIEAS), Islamabad (Pakistan)

### PhD Thesis Title

“Holography based Optical super resolution”

## **RESEARCH INTEREST:**

- Optical Imaging
- Superresolution
- Holography
- Spatial Light Modulator for image processing

## **Programming Experience**

- Mathematica
- Labview
- Matlab

## **AWARDS and Projects**

1. International (Regional) Cooperation and Exchange Project, National Natural Science Foundation of China, "Wide Field phase masking lensless imaging", 2018
2. Post-doctoral research fellowship award, Zhejiang University China (2016-2017).
3. HEC approved Startup Research projects "Simultaneous recording of two holograms with crossed polarized light for optical superresolution" 0.5 Million as PI
4. HEC approved Startup Research projects, "To examine the effects of Kerr medium and external coherent driving field on the behavior of phase time of ultra-cold atoms passing through a mazer cavity" 0.5 Million as Co-PI.
5. Successfully completed two months (23<sup>rd</sup> June 2014 to 22<sup>nd</sup> August 2014) Faculty Development Training.
6. Awarded six-month research under the "International Research Support Initiative Program" by HEC in 2012.
7. Higher Education Commission (HEC) of Pakistan Indigenous scholarship award for M. Phil leading to PhD scholarship in 2007.

## **LANGUAGES**

- English
- Urdu
- Pashto

## **PUBLICATIONS**

1. Anwar Hussain, Yicheng Li, Diyi Liu, Cuifang Kuang and Xu Liu, "Lensless imaging through multiple phase patterns illumination", J. Biomed. Opt. **22** (11), 2017.
2. Anwar Hussain, Yicheng Li, Diyi Liu, Cuifang Kuang and Xu Liu, "On-chip microscopy through random phase mask scheme", Scientific Report, **7**, article number 14768 (2017).

3. Dazhao Zhu, Youhua Chen, Yue Fang, **Anwar Hussain**, Cuifang Kuang, Xiaoxu Zhou, Yingke Xu, Xu Liu, "Compact three-dimensional super-resolution system based on fluorescence emission difference microscopy", *Optics Communication*, **405**,157-163, (2017).
4. **Anwar Hussain**, Tariq Amin, Cuifang Kuang, Liangcai Cao, Xu Liu, "Simple fringe illumination technique for optical super resolution", *Journal of Optical society of America B*, **34**, issue 5, B78-B84 (2017).
5. Dazhao Zhu, Yue Fang, Youhua Chen, **Anwar Hussain**, Cuifang Kuang, Zhihua Ding, Xu Liu, "Comparison of multi-mode parallel detection microscopy methods" *Optics Communications*, 387, 275–280 (2017).
6. **Anwar Hussain** and José Luis Martínez Fuentes," Resolution enhancement using simultaneous couple illumination", *Journal of Optics*, Vol. 18, NO. 10, pp105702 (2016).
7. **Anwar Hussain**, "Super resolution imaging using interferometric masking technique", *Optik - International Journal for Light and Electron Optics*, **126**, 5629–5632 (2015)
8. **Anwar Hussain** and Asloob A. Mudassar, "Optical super resolution using tilted illumination coupled with object rotation", *Optics Communications* **339**, 34-40 (2015).
9. **Anwar Hussain**, Martínez, J. L., Lizana, A. & Campos, J. "Super resolution imaging achieved by using on-axis interferometry based on a Spatial Light Modulator". *Opt. Express* **21**, 9615-9623 (2013).
10. **Anwar Hussain**, Martínez, J. L. & Campos, J. "Holographic superresolution using spatial light modulator", *J. Europ. Opt. Soc. Rap. Public.***8**, 13007 (2013).
11. **Anwar Hussain** & Mudassar, A. A. "Holography based super resolution", *Optics Communications* **285**, 2303-2310 (2012).
12. Mudassar, A. A. & **Anwar Hussain**. "Super-resolution of active spatial frequency heterodyning using holographic approach", *Appl. Opt.*, **49**, 3434-3441 (2010).

## CONFERENCE PROCEEDING

1. **Anwar Hussain**, Yicheng Li, Cuifang Kuang and Xu Liu "Wide Field Lensless Microscopy through phase masking technique" The 6<sup>th</sup> conference on advance in optoelectronics and Micro/nano-optics, 23-26 April 2017, Nanjing, China.
2. Yicheng Li, Diyi Liu, **Anwar Hussain**, Cuifang Kuang and Xu Liu, Holographic Reconstruction Based on Diffused Multi-height Recovery , The 6<sup>th</sup> conference on advance in optoelectronics and Micro/nano-optics, 23-26 April 2017, Nanjing, China.
3. **Anwar Hussain**, Yicheng Li, Cuifang Kuang and Xu Liu, "Wide Field Lensless Superresolution Microscopy Using Phase Mask", *Focus on Microscopy*, 9-12 April 2017, Bordeaux, France.
4. **Anwar Hussain**, José L. Martínez, A. Lizana and Juan Campos, "Multiplexing structured illumination in Spatial Light Modulators to achieve superresolution", X Reunión Nacional de Óptica, Zaragoza Spain, September 2012.

5. **Anwar Hussain**, Mohammad Sohail, Jose Luis Martinez, Angel Lizana, Andrés Márquez, Juan Campos, “Super-resolution imaging based on liquid crystal on silicon displays technology”, *Proc. SPIE 8789*, Modeling Aspects in Optical Metrology IV, 878918 (May 13, 2013) Munich Germany.
6. A. Lizana , A. Peinado , C. Ramírez , J. L. Martínez , **A. Hussain**, J. Campos et al. “ Different applications of liquid crystal panels” , *Proc. SPIE 8785*, 8th Iberoamerican Optics Meeting and 11th Latin American Meeting on Optics, Lasers, and Applications, 87850Y (November 18, 2013) Porto Portugal.