

## Assoc. Prof. GÖKHAN BORA ESMER

### Personal Information

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### Biography

Gökhan Bora Esmer received the Ph.D. degree in Electrical and Electronics Engineering in 2010 from Bilkent University, Turkey. He worked as an instructor in Bilkent University for the following semester. In 2011, he joined the faculty of Engineering at Marmara University in Istanbul, Turkey. He is currently an Associate Professor in the Department of Electrical and Electronics Engineering at Marmara University. His research interests are in the areas of 3D visualization techniques, digital holography and computer-generated holography.

### Education Information

Doctorate, İhsan Doğramacı Bilkent Üniversitesi, Mühendislik Ve Fen Bilimleri Enstitüsü, Elektrik-Elektronik Mühendisliği (Dr), Turkey 2004 - 2010

Post Graduate, İhsan Doğramacı Bilkent Üniversitesi, Mühendislik Ve Fen Bilimleri Enstitüsü, Elektrik Ve Elektronik Mühendisliği (YI) (Tezli), Turkey 2001 - 2004

Under Graduate, Hacettepe Üniversitesi, Mühendislik Fakültesi, Elektrik-Elektronik Mühendisliği Bölümü, Turkey 1997 - 2004

### Dissertations

Doctorate, Calculation of scalar optical diffraction field from its distributed samples over the space, İhsan Doğramacı Bilkent Üniversitesi, Mühendislik Ve Fen Bilimleri Enstitüsü, Elektrik-Elektronik Mühendisliği (Dr), 2010

Post Graduate, Computation of holographic patterns between tilted planes, İhsan Doğramacı Bilkent Üniversitesi, Mühendislik Ve Fen Bilimleri Enstitüsü, Elektrik Ve Elektronik Mühendisliği (YI) (Tezli), 2004

### Research Areas

Electrical and Electronics Engineering, Optics and Photonics, Engineering and Technology

### Academic Titles / Tasks

Associate Professor, Marmara University, Faculty of Engineering, Elektrik-Elektronik Mühendisliği Bölümü, 2014 - Continues

Assistant Professor, Marmara University, Faculty of Engineering, Elektrik-Elektronik Mühendisliği Bölümü, 2011 - 2014

Assistant Professor, Beykent Üniversitesi, Mühendislik-Mimarlık Fakültesi, Elektronik Ve Haberleşme Mühendisliği Bölümü, 2010 - 2011

Lecturer, İhsan Doğramacı Bilkent Üniversitesi, Mühendislik Fakültesi, Elektrik-Elektronik Mühendisliği Bölümü, 2010 - 2010

Research Assistant, İhsan Doğramacı Bilkent Üniversitesi, Mühendislik Fakültesi, Elektrik-Elektronik Mühendisliği Bölümü, 2001 - 2010

## Professional Experience

Deputy Head of Department, Marmara University, Faculty of Engineering, Elektrik-Elektronik Mühendisliği Bölümü, 2014 - 2017

Head of Department, Marmara University, Faculty of Engineering, Elektrik-Elektronik Mühendisliği Bölümü, 2011 - 2017

## Courses

Optics, Post Graduate, 2018 - 2019

Engineering Project II, Under Graduate, 2018 - 2019

Circuit Theory II, Under Graduate, 2018 - 2019

Introduction to Image Processing, Under Graduate, 2018 - 2019

Signals and Systems, Under Graduate, 2018 - 2019

Engineering Project I, Under Graduate, 2018 - 2019

Advanced Signal Processing, Post Graduate, 2018 - 2019

## Articles Published in Journals That Entered SCI, SSCI and AHCI Indexes

- I. **Accurate diffraction field calculation method based on L-1-norm minimization from three-dimensional objects**  
ESMER G. B.  
APPLIED OPTICS, vol.58, 2019 (Journal Indexed in SCI)
- II. **Real-time computation of diffraction fields for pixelated spatial light modulators**  
Esmer G. B.  
OPTICS EXPRESS, vol.23, pp.12636-12647, 2015 (Journal Indexed in SCI)
- III. **An algorithm for resolution enhancement of low-resolution patterns captured by a sensor array**  
Esmer G. B.  
OPTICS COMMUNICATIONS, vol.313, pp.421-429, 2014 (Journal Indexed in SCI)
- IV. **Fast computation of Fresnel diffraction field of a three-dimensional object for a pixelated optical device**  
Esmer G. B.  
APPLIED OPTICS, vol.52, 2013 (Journal Indexed in SCI)
- V. **Exact diffraction calculation from fields specified over arbitrary curved surfaces**  
ESMER G. B. , ONURAL L., ÖZAKTAŞ M. H.  
OPTICS COMMUNICATIONS, vol.284, pp.5537-5548, 2011 (Journal Indexed in SCI)
- VI. **Diffraction field computation from arbitrarily distributed data points in space**  
ESMER G. B. , Uzunov V., ONURAL L., ÖZAKTAŞ M. H. , Gotchev A.  
SIGNAL PROCESSING-IMAGE COMMUNICATION, vol.22, pp.178-187, 2007 (Journal Indexed in SCI)

## Articles Published in Other Journals

- I. **Performance Assessment of a Fast and Accurate Scalar Optical Diffraction Field Computation Algorithm**  
ESMER G. B.  
3D-Research, vol.4, 2013 (Refereed Journals of Other Institutions)

## Books & Book Chapters

- I. **Holographic 3DTV Displays Using Spatial Light Modulators**  
metodi k., rositza i., philip b., ESMER G. B. , ONURAL L., john w., REYHAN T.  
in: Three Dimensional Television Capture Transmission Display, Haldun M. Ozaktas, Levent Onural, Editor,  
Springer, Berlin, pp.529-555, 2008

## Refereed Congress / Symposium Publications in Proceedings

- I. **Volumetric extraction of pulmonary blood vessels from computerized tomography scans**  
ARIBAŞ K., ESMER G. B. , ŞİŞMAN A., LAÇIN T., SARIGÜL N., AYVACIKLI B.  
2018 26th Signal Processing and Communications Applications Conference (SIU), İzmir, Turkey, 2 - 05 May 2018,  
vol.1, pp.1-4
- II. **L1-norm minimization-based accurate diffraction field calculation method emitted by three-dimensional objects**  
ESMER G. B.  
Conference on Unconventional Optical Imaging, Strasbourg, France, 22 - 26 April 2018, vol.10677
- III. **Computation of exact diffraction field from its distributed samples**  
ESMER G. B.  
SPIE Conference on Practical Holography XXXI - Materials and Applications, San-Francisco, Costa Rica, 30 January -  
01 February 2017, vol.10127
- IV. **Performance assessment of LUT based diffractionfield calculation method for pixelated SLMs**  
ESMER G. B.  
Digital Holography and 3D Imaging, Heidelberg, Germany, 25 - 28 July 2016
- V. **Real-Time Diffraction Field Calculation Method for Spatial Light Modulators with Pixelated Structure**  
ESMER G. B.  
24th Signal Processing and Communication Application Conference (SIU), Zonguldak, Turkey, 16 - 19 May 2016,  
pp.1557-1560
- VI. **Pikselli Yapıya Sahip Uzamsal I sık Kipleycileri için Gerçek Zamanlı Kırınım Deseni Hesaplama Yöntemi**  
ESMER G. B.  
Sinyal İşleme ve Uygulamaları Kurultayı 2016, Turkey, 16 - 19 May 2016
- VII. **Reconstruction of Diffraction Field From Its Samples Distributed Over Space**  
ESMER G. B. , otilia p., popescu d.  
Digital Holography & 3-D Imaging Meeting, Shanghai, China, 24 - 28 May 2015
- VIII. **An Iterative Algorithm for Improving Resolution and Signal to Noise Ratio of Captured Noisy Low Resolution Diffraction Fields**  
ESMER G. B.  
Digital Holography and 3D Imaging, 13 - 17 July 2014
- IX. **Fast Computation Of Scalar Optical Diffraction Pattern For Pixelated Spatial Light Modulators**  
Esmer G. B.  
22nd IEEE Signal Processing and Communications Applications Conference (SIU), Trabzon, Turkey, 23 - 25 April  
2014, pp.224-227
- X. **Pikselli Uzamsal Işık Kipleycileri için Skalar Optik Kırınım Deseninin Hızlı Hesaplanması**

- ESMER G. B.  
22. Sinyal İşleme ve Uygulamaları Kurultayı, Trabzon, Turkey, 23 - 25 April 2014
- XI. **Algorithms for Fast Calculation of Scalar Optical Diffraction Field on a Pixelated Display Device**  
ESMER G. B.  
IEEE-Africon2013, 9 - 12 September 2013
- XII. **Performance Assessment of a Fast and Accurate Scalar Optical Diffraction Field Computation Algorithm**  
ESMER G. B.  
Collaborative Conference on 3D Research 2013, 24 - 28 June 2013
- XIII. **Örnekleme Yerlerinin Skalar Kırınım Deseninin Doğru Hesaplanmasındaki Etkisi**  
ESMER G. B. , ONURAL L., ÖZAKTAŞ M. H.  
20. Sinyal İşleme ve Uygulamaları Kurultayı, Muğla, Turkey, 18 - 20 April 2012
- XIV. **Performance Assessment of A Diffraction Field Computation Method Based on Source Model**  
ESMER G. B. , ONURAL L., ÖZAKTAŞ M. H. , vladislav u., atanas g.  
IEEE-3DTVCon 2008, 28 - 30 May 2008
- XV. **Reconstruction of Scalar Diffraction Field from Distributed Data Points Over 3D Space**  
ESMER G. B. , ONURAL L., vladislav u., atanas g., ÖZAKTAŞ M. H.  
IEEE-3DTVCon 2007, 7 - 09 May 2007
- XVI. **Bessel Functions Based Reconstruction of Non Uniformly Sampled Diffraction Fields**  
vladislav u., ESMER G. B. , atanas g., ONURAL L., ÖZAKTAŞ M. H.  
IEEE-3DTVCon 2007, 7 - 09 May 2007
- XVII. **An algorithm for calculation of scalar optical diffraction due to distributed data over 3D space**  
ESMER G. B. , ONURAL L., ÖZAKTAŞ M. H. , atanas g.  
Proceedings of the 2nd Workshop on Immersive Communication and Broadcast Systems, ICOB 2005, Berlin, Germany, 27 October 2005 - 28 October 2006
- XVIII. **Signal Processing Problems and Algorithms in Display Side of 3DTV**  
ULUSOY E., ESMER G. B. , ÖZAKTAŞ M. H. , ONURAL L., atanas g., vladislav u.  
ICIP 2006, 8 - 11 October 2006
- XIX. **Reconstruction of Computer Generated Holograms by Spatial Light Modulators**  
metodi k., rossitza i., ONURAL L., ESMER G. B. , REYHAN T., john w., philip b.  
International Workshop, MRCS 2006, 11 - 13 September 2006
- XX. **Non uniform sampling and reconstruction of diffraction field**  
vladislav u., atanas g., ESMER G. B. , ÖZAKTAŞ M. H. , ONURAL L.  
Workshop on SMMSP'06, 2 - 03 September 2006
- XXI. **Computation of holographic patterns between tilted planes**  
ESMER G. B. , ONURAL L.  
Holography 2005: International Conference on Holography, Optical Recording, and Processing of Information, Varna, Bulgaria, 21 - 25 May 2005
- XXII. **Simulation of scalar optical diffraction between arbitrarily oriented planes**  
ESMER G. B. , ONURAL L.  
Control, Communications and Signal Processing, 2004. First International Symposium on, Hammamet, Tunisia, 21 - 24 March 2004
- XXIII. **Hologram Simülatörü**  
ESMER G. B. , ONURAL L.  
11. Sinyal İşleme ve İletişim Uygulamaları Kurultayı, İstanbul, Turkey, 18 - 20 June 2003, pp.487-490

## Citations

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