

# Prof. MUSTAFA ALEVLİ

## Personal Information

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## Education Information

Doctorate, Georgia State University, Physics & Astronomy, United States Of America 2004 - 2008

Post Graduate, Georgia State University, Physics&Astronomy, United States Of America 2001 - 2004

Post Graduate, Marmara University, Institute for Graduate Studies in Pure and Applied Sciences, Fizik (YI) (Tezli), Turkey 1998 - 2001

Under Graduate, Marmara University, Faculty of Arts and Sciences, Physics, Turkey 1994 - 1998

## Dissertations

Doctorate, Growth and characterization of indium nitride layers grown by high-pressure chemical vapor deposition, Georgia State University, Physics & Astronomy, 2005

Post Graduate, Cut off wavelength dependence on doping concentration for highly doped p-type GaAs detector structures, Georgia State University, Physics&Astronomy, 2001

Post Graduate, Titanyum atomunun toplam ve kısmi fotoiyonlaşma tesir kesiti hesapları, Marmara Üniversitesi, Fen Bilimleri Enstitüsü, Fizik (YI) (Tezli), 2001

## Research Areas

Printed Circuits, Thin Film, Thick Film and Hybrid ICs, Sensing Devices and Transducers, Nanotechnology, Optics and Photonics, Lighting Technology, Renewable energy, Dielectric Materials and Devices, Optical Materials and Devices, Optoelectronic Materials and Devices, Semiconducting Materials and Devices, Solar energy, Physics, Atomic Spectra and Photon Interactions, Molecular Properties and Interactions with Photon, Interdisciplinary Physics and Related Science and Technology Areas, Optics, Condensed Matter 1: Structural, Mechanical and Thermal Properties

## Academic Titles / Tasks

Associate Professor, Marmara University, Faculty of Arts and Sciences, 2013 - Continues

Assistant Professor, Marmara University, Faculty of Arts and Sciences, Physics, 2011 - 2013

Expert, İhsan Doğramacı Bilkent Üniversitesi, Ulusal Nanoteknoloji Uygulama Ve Araştırma Merkezi, 2010 - 2011

Lecturer PhD, University Of Nevada, Las Vegas, Harry Reid Center For Environmental Studies, 2010 - 2010

Lecturer, Georgia State University, College Of Arts And Sciences, Physics And Astronomy, 2008 - 2010

Research Assistant, Georgia State University, College Of Arts & Sciences, Physics & Astronomy, 2001 - 2008

Research Assistant, Marmara University, Faculty of Arts and Sciences, Physics, 1998 - 2001

## Professional Experience

Erasmus Coordinator, Marmara University, Institute for Graduate Studies in Pure and Applied Sciences, Fizik (YI) (Tezli) (İngilizce), 2011 - Continues

## Advising Theses

Alevli M., Optical Properties of Group III Nitride Thin films grown by hollow cathode plasma assisted atomic layer

deposition, Doctorate, N.Güngör(Student), 2019

ALEVLİ M., Plazma ile etkilendirilmiş atomik katman büyütme yöntemi ile büyütülen AlN ince filmlerin optik özellikleri, Post Graduate, N.GÜNGÖR(Student), 2013

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

- **Visible/infrared refractive index and phonon properties of GaN films grown on sapphire by hollow-cathode plasma-assisted atomic layer deposition**  
Gungor N., ALEVLİ M.  
Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, vol.37, 2019 (Journal Indexed in SCI)
- **Role of film thickness on the structural and optical properties of GaN on Si (100) grown by hollow-cathode plasma-assisted atomic layer deposition**  
Gungor N., ALEVLİ M.  
JOURNAL OF VACUUM SCIENCE & TECHNOLOGY A, vol.36, 2018 (Journal Indexed in SCI)
- **Influence of N-2/H-2 and N-2 plasma on binary III-nitride films prepared by hollow-cathode plasma-assisted atomic layer deposition**  
ALEVLİ M., Gungor N.  
JOURNAL OF VACUUM SCIENCE & TECHNOLOGY A, vol.36, 2018 (Journal Indexed in SCI)
- **Enhancement in c-Si solar cells using 16 nm InN nanoparticles**  
Chowdhury F. I. , Alnuaimi A., Alkis S., ORTAÇ B., Akturk S., ALEVLİ M., Dietz N., OKYAY A. K. , Nayfeh A.  
MATERIALS RESEARCH EXPRESS, vol.3, 2016 (Journal Indexed in SCI)
- **Comparison of trimethylgallium and triethylgallium as "Ga" source materials for the growth of ultrathin GaN films on Si (100) substrates via hollow-cathode plasma-assisted atomic layer deposition**  
ALEVLİ M., Haider A., Kizir S., Leghari S. A. , BYKLI N.  
JOURNAL OF VACUUM SCIENCE & TECHNOLOGY A, vol.34, 2016 (Journal Indexed in SCI)
- **Substrate temperature influence on the properties of GaN thin films grown by hollow-cathode plasma-assisted atomic layer deposition**  
ALEVLİ M., Gungor N., Haider A., Kizir S., Leghari S. A. , BYKLI N.  
JOURNAL OF VACUUM SCIENCE & TECHNOLOGY A, vol.34, 2016 (Journal Indexed in SCI)
- **Enhancement of polycrystalline silicon solar cells efficiency using indium nitride particles**  
Alkis S., Chowdhury F. I. , ALEVLİ M., Dietz N., Yalızay B., Akturk S., Nayfeh A., OKYAY A. K.  
JOURNAL OF OPTICS, vol.17, 2015 (Journal Indexed in SCI)
- **A Near-Infrared Range Photodetector Based on Indium Nitride Nanocrystals Obtained Through Laser Ablation**  
Tekcan B., Alkis S., ALEVLİ M., Dietz N., ORTAÇ B., BYKLI N., OKYAY A. K.  
IEEE ELECTRON DEVICE LETTERS, vol.35, pp.936-938, 2014 (Journal Indexed in SCI)
- **Enhanced memory effect via quantum confinement in 16nm InN nanoparticles embedded in ZnO charge trapping layer**  
El-Atab N., Cimen F., Alkis S., Orta B., ALEVLİ M., Dietz N., OKYAY A. K. , Nayfeh A.  
APPLIED PHYSICS LETTERS, vol.104, 2014 (Journal Indexed in SCI)
- **Thermal stability of InN epilayers grown by high pressure chemical vapor deposition**  
Acharya A. R. , Gamage S., Senevirathna M. K. I. , ALEVLİ M., Bahadir K., Melton A. G. , Ferguson I., Dietz N., Thoms B. D.  
APPLIED SURFACE SCIENCE, vol.268, pp.1-5, 2013 (Journal Indexed in SCI)
- **Generation of InN nanocrystals in organic solution through laser ablation of high pressure chemical vapor deposition-grown InN thin film**  
Alkis S., ALEVLİ M., Burzhuev S., Vural H. A. , OKYAY A. K. , ORTAÇ B.  
JOURNAL OF NANOPARTICLE RESEARCH, vol.14, 2012 (Journal Indexed in SCI)
- **Optical properties of AlN thin films grown by plasma enhanced atomic layer deposition**  
Alevli M., Ozgıt C., Donmez I., BYKLI N.  
JOURNAL OF VACUUM SCIENCE & TECHNOLOGY A, vol.30, 2012 (Journal Indexed in SCI)
- **Structural properties of AlN films deposited by plasma-enhanced atomic layer deposition at different growth temperatures**

Alevli M., Ozgit C., Donmez I., Biyikli N.

PHYSICA STATUS SOLIDI A-APPLICATIONS AND MATERIALS SCIENCE, vol.209, pp.266-271, 2012 (Journal Indexed in SCI)

- **Self-limiting low-temperature growth of crystalline AlN thin films by plasma-enhanced atomic layer deposition**  
Ozgit C., Donmez I., ALEVLİ M., BİYİKLİ N.  
THIN SOLID FILMS, vol.520, pp.2750-2755, 2012 (Journal Indexed in SCI)
- **Atomic layer deposition of GaN at low temperatures**  
Ozgit C., Donmez I., ALEVLİ M., BİYİKLİ N.  
JOURNAL OF VACUUM SCIENCE & TECHNOLOGY A, vol.30, 2012 (Journal Indexed in SCI)
- **The Influence of Growth Temperature on the Properties of AlN Films Grown by Atomic Layer Deposition**  
ALEVLİ M., Ozgit C., Donmez i.  
ACTA PHYSICA POLONICA A, vol.120, 2011 (Journal Indexed in SCI)
- **The influence of N<sub>2</sub>/H<sub>2</sub> and ammonia N source materials on optical and structural properties of AlN films grown by plasma enhanced atomic layer deposition**  
ALEVLİ M., Ozgit C., Donmez I., BİYİKLİ N.  
JOURNAL OF CRYSTAL GROWTH, vol.335, pp.51-57, 2011 (Journal Indexed in SCI)
- **Optical properties of InN grown on templates with controlled surface polarities**  
Kirste R., Wagner M., Schulze J., Strittmatter A., Collazo R., Sitar Z., ALEVLİ M., Dietz N., Hoffmann A.  
PHYSICA STATUS SOLIDI A-APPLICATIONS AND MATERIALS SCIENCE, vol.207, pp.2351-2354, 2010 (Journal Indexed in SCI)
- **The influence of the group V/III molar precursor ratio on the structural properties of InGaN layers grown by HPCVD**  
DURKAYA G., BUEGLER M., ATALAY R., Senevirathna I., ALEVLİ M., HİTZEMANN O., KAİSER M., KİRSTE R., HOFFMANN A., DIETZ N.  
PHYSICA STATUS SOLIDI A-APPLICATIONS AND MATERIALS SCIENCE, vol.207, pp.1379-1382, 2010 (Journal Indexed in SCI)
- **Optical characterization of InN layers grown by high-pressure chemical vapor deposition**  
ALEVLİ M., ATALAY R., DURKAYA G., Weesekara A., Perera A. G. U. , Dietz N., Kirste R., Hoffmann A.  
JOURNAL OF VACUUM SCIENCE & TECHNOLOGY A, vol.26, pp.1023-1026, 2008 (Journal Indexed in SCI)
- **Desorption of hydrogen from InN(0001)over-bar) observed by HREELS**  
Bhatta R., Thoms B. D. , ALEVLİ M., Dietz N.  
SURFACE SCIENCE, vol.602, pp.1428-1432, 2008 (Journal Indexed in SCI)
- **The influence of substrate polarity on the structural quality of InN layers grown by high-pressure chemical vapor deposition**  
Dietz N., ALEVLİ M., ATALAY R., DURKAYA G., Collazo R., Tweedie J., Mita S., Sitar Z.  
APPLIED PHYSICS LETTERS, vol.92, 2008 (Journal Indexed in SCI)
- **Surface electron accumulation in indium nitride layers grown by high pressure chemical vapor deposition**  
Bhatta R., Thoms B., ALEVLİ M., Dietz N.  
SURFACE SCIENCE, vol.601, 2007 (Journal Indexed in SCI)
- **Carrier concentration and surface electron accumulation in indium nitride layers grown by high pressure chemical vapor deposition**  
Bhatta R. P. , Thoms B. D. , Weerasekera A., Perera A. G. , ALEVLİ M., Dietz N.  
JOURNAL OF VACUUM SCIENCE & TECHNOLOGY A, vol.25, pp.967-970, 2007 (Journal Indexed in SCI)
- **Performance improvements of ultraviolet/infrared dual-band detectors**  
Perera A., Ariyawansa G., Rinzan M., Stevens M., ALEVLİ M., Dietz N., Matsik S., Asghar A., Ferguson I., Luo H., et al.  
INFRARED PHYSICS & TECHNOLOGY, vol.50, pp.142-148, 2007 (Journal Indexed in SCI)
- **Characterization of InN layers grown by high-pressure chemical vapor deposition**  
ALEVLİ M., DURKAYA G., Weerasekara A., Perera A. G. U. , Dietz N., Fenwick W., Woods V., Ferguson I. F.  
APPLIED PHYSICS LETTERS, vol.89, 2006 (Journal Indexed in SCI)
- **GaN/AlGaIn ultraviolet/infrared dual-band detector**

Ariyawansa G., Rinzan M. B. , ALEVLİ M., Strassburg M., Dietz N., Perera A. G. U. , Matsik S. G. , Asghar A., Ferguson I., Luo H., et al.

APPLIED PHYSICS LETTERS, vol.89, 2006 (Journal Indexed in SCI)

- **Surface structure, composition, and polarity of indium nitride grown by high-pressure chemical vapor deposition**

Bhatta R. P. , Thoms B. D. , ALEVLİ M., Woods V., Dietz N.

APPLIED PHYSICS LETTERS, vol.88, 2006 (Journal Indexed in SCI)

- **The Fermi level dependence of the optical and magnetic properties of Ga<sub>1-x</sub>Mn<sub>x</sub>N grown by metal-organic chemical vapour deposition**

Strassburg M., Kane M., Asghar A., Song Q., Zhang Z. J. , Senawiratne J., ALEVLİ M., Dietz N., Summers C. J. , Ferguson I.

JOURNAL OF PHYSICS-CONDENSED MATTER, vol.18, pp.2615-2622, 2006 (Journal Indexed in SCI)

- **The characterization of InN growth under high-pressure CVD conditions**

Dietz N., ALEVLİ M., Woods V., Strassburg M., Kang H., Ferguson I.

PHYSICA STATUS SOLIDI B-BASIC SOLID STATE PHYSICS, vol.242, pp.2985-2994, 2005 (Journal Indexed in SCI)

- **The effects of light heavy hole transitions on the cutoff wavelengths of far infrared detectors**

Perera A. G. U. , Matsik S. G. , Rinzan M. B. , Weerasekara A., ALEVLİ M., Liu H., Buchanan M., Zvonkov B., Gavrilenko V.

Infrared Physics, vol.44, pp.347-353, 2003 (Journal Indexed in SCI Expanded)

- **Equation of state of alkane and alkylbenzene liquids: A test of the group contributions of scaling parameters for physical and chemical mixtures**

Yahsi U., Kuzeci S., Alevli M.

INTERNATIONAL JOURNAL OF THERMOPHYSICS, vol.23, pp.501-512, 2002 (Journal Indexed in SCI)

## Refereed Congress / Symposium Publications in Proceedings

- **Critical Layer Thickness of GaN Thin Films on sapphire grown by hollow-cathode plasma assisted atomic layer deposition**

ALEVLİ M., Gungor N.

European Materials Research Society Spring 2018, France, 18 - 22 Haziran 2018

- **Optical properties of GaN and InN on quartz grown by hollow-cathode plasma-assisted atomic layer deposition**

Gungor N., ALEVLİ M.

ICG Annual meeting, 22 - 25 Ekim 2017

- **Critical Thickness on Optical Properties at UV VIS and Infrared Region of GaN Thin Films Grown by Hollow Cathode Assisted Atomic Layer Deposition**

Gungor N., ALEVLİ M.

Fotonik 2016 /18. ulusal optik, Elektro Optik Fotonik Çalıştayı, Ankara, Turkey, 23 Eylül 2016

- **THE ROLE OF THICKNESS ON INFRARED OPTICAL PROPERTIES OF GALLIUM NITRIDE THIN FILMS GROWN BY HOLLOW CATHODE PLASMA ASSISTED ATOMIC LAYER DEPOSITION**

Gungor N., ALEVLİ M., Kizir S., Haider A., BİYKLI N.

Turkish Physical Society 32nd International Physics Congress, Bodrum, Turkey, 6 - 09 Eylül 2016

- **Infrared dielectric functions phonon modes and band gap properties of plasma assisted ALD grown In<sub>x</sub>Ga<sub>1-x</sub>N films**

ALEVLİ M., Gungor N., Haider A., Kızır S., BİYKLI N.

The 16th International Conference on Atomic Layer Deposition, Dublin, Ireland, 24 - 27 Temmuz 2016

- **The Role of Film Thickness on the Visible UV and Infrared Optical Properties of GaN Films Grown By Hollow Cathode Plasma Assisted Atomic Layer Deposition**

ALEVLİ M., Gungor N., Haider A., Kizir S., BİYKLI N.

The 16th International Conference on Atomic Layer Deposition, Dublin, Ireland, 24 - 27 Temmuz 2016

- **Influence of N<sub>2</sub> H<sub>2</sub> and N<sub>2</sub> Plasma on Binary III Nitride Films Prepared by Hollow Cathode Plasma Assisted Atomic Layer Deposition**

ALEVLİ M., Gungor N., Ozgit Akgun C., Haider A., Kızır S., BİYKLİN.

The 16th International Conference on Atomic Layer Deposition, Dublin, Ireland, 24 - 27 Temmuz 2016

- **Effect of Substrate Temperature and Ga source Precursor on Growth and Material Properties of GaN Grown by Hollow Cathode Plasma Assisted Atomic Layer Deposition**  
Haider A., Kızır S., Deminskyi P., Tsybalenko O., Leghari S. A. , BİYKLİN., ALEVLİ M., Gungor N.  
36th IEEE International Conference on Electronics and Nanotechnology (ELNANO), Kyiv, Ukraine, 19 - 21 Nisan 2016, pp.132-134
- **Hollow Cathode Plasma Assisted Atomic Layer Deposition of Wurtzite InN and In<sub>x</sub>Ga<sub>1-x</sub>N Thin Films with Low Impurity Content**  
Haider A., Kızır S., Ozgit Akgun C., Goldenberg E., ALEVLİ M., OKYAY A. K. , BİYKLİN.  
American Vacuum Society 62nd international symposium, 18 - 23 Ekim 2015
- **Comparison Studies of GaN Grown with Trimethylgallium and Triethylgallium for Optoelectronic Applications**  
ALEVLİ M., Heider A., Gungör N., Kızır S., Sabri A., OKYAY A. K. , BİYKLİN.  
American vacuum Society 62 nd International Meeting, San-Jose, Costa Rica, 18 - 23 Ekim 2015
- **Comparison of Trimethylgallium and Triethylgallium as Ga Source Materials for the Growth of Ultra thin GaN Films via Hollow cathode Plasma assisted ALD**  
ALEVLİ M., Güngör N., Özgüt Akgün Ç., Haider A., Kızır S., Leghari S., Alkis S., OKYAY A. K. , BİYKLİN.  
American Vacuum Society, Portland, United States Of America, 28 Haziran - 01 Temmuz 2015
- **Substrate Temperature Influence on the Properties of GaN Thin Films Grown by Hollow cathode Plasma assisted Atomic Layer Deposition**  
ALEVLİ M., Güngör N., Ozgit Akgun C., Kızır S., Haider A., Leghari S., Alkis S., OKYAY A. K. , BİYKLİN.  
American Vacuum Society 15th Conference on Atomic Layer deposition, Portland, United States Of America, 28 - 01 Haziran 2015, pp.370
- **Enhanced Light Scattering with Energy Downshifting Using 16 nm Indium Nitride Nanoparticles for Improved Thin film a Si N i P Solar Cells**  
Chowdhury F. I. , İslam K., Alkis S., ORTAÇ B., ALEVLİ M., Dietz N., OKYAY A. K. , Nayfeh A.  
227th Electro Chemical Society meeting, Chicago, United States Of America, 24 - 28 Mayıs 2015, vol.66, pp.9-16
- **Effect of reactor pressure on optical and electrical properties of InN films grown by high-pressure chemical vapor deposition**  
ALEVLİ M., Gungor N., Alkis S., Ozgit-Akgun C., Donmez I., OKYAY A. K. , Gamage S., Senevirathna I., Dietz N., BİYKLİN.  
5th International Symposium on Growth of III-Nitrides (ISGN), Georgia, United States Of America, 18 - 22 Mayıs 2014, vol.12, pp.423-429
- **Growth temperature - Phase stability relation in In<sub>1-x</sub>Ga<sub>x</sub>N epilayers grown by high-pressure CVD**  
Durkaya G., Alevli M., Buegler M., Atalay R., Gamage S., Kaiser M., Kirste R., Hoffmann A., Jamil M., Ferguson I., et al.  
2009 MRS Fall Meeting, Boston, MA, United States Of America, 30 Kasım - 04 Aralık 2009, vol.1202, pp.277-282
- **Optical and structural properties of InN grown by HPCVD**  
Buegler M., Alevli M., Atalay R., Durkaya G., Senevirathna I., Jamil M., Ferguson I., Dietz N.  
9th International Conference on Solid State Lighting, San Diego, CA, United States Of America, 3 - 05 Ağustos 2009, vol.7422
- **Properties of InN layers grown by high pressure CVD**  
Alevli M., Durkaya G., Kirste R., Weesekara A., Perera U., Fenwick W., Woods V., Ferguson I. T. , Hoffmann A., Dietz N.  
2006 MRS Fall Meeting, Boston, MA, United States Of America, 27 Kasım - 01 Aralık 2006, vol.955, pp.291-296
- **Properties of InN grown by high-pressure CVD**  
Alevli M., Durkaya G., Woods V., Haboeck U., Kang H., Senawiratne J., Strassburg M., Ferguson I. T. , Hoffmann A., Dietz N.  
2005 Materials Research Society Fall Meeting, Boston, MA, United States Of America, 28 Kasım - 02 Aralık 2005, vol.892, pp.77-82
- **The growth of InN and related alloys by high-pressure CVD**  
Dietz N., Alevli M., Kang H., Straßburg M., Woods V., Ferguson I. T. , Moore C. E. , Cardelino B. H.

## **Supported Projects**

Alevli M., TUBITAK Project, Atomik Katman Büyütme Yöntemi ile Kaplanan GaN Galyum Nitrat İnce Filmlerinin Optik Karakterizasyonu, 2014 - 2015

## **Citations**

Total Citations (WOS):510

h-index (WOS):13