

## **AFANDIYEVA IZZET MAMMAD**

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### **AUTOBIOGRAPHY:**

- 1950, September 10 - was born in Ganja city of the Azerbaijan Republic. Nationality - Azerbaijani;
- 1967-1972 - Student of Physical faculty, Baku State University;
- 1972-1974 - Physics teacher, School number 17 of Railroad Administration, Ganja;
- 1974-1977 - Engineer, Special Design Bureau of the Institute of Physics Academy of Sciences of the Azerbaijan .
- 1977-1989 - Junior Researcher of Scientific Laboratory of Semiconductor Physics (now Institute of Physical Problems) Baku State University;
- 1989-1997 - Deputy of first vice-rector, team leader for publications and exhibitions of Baku State University;
- 1997-2018 - Senior Researcher, Leading Researcher, Chief Researcher of Institute of Physical Problems Baku State University;
- 2012- until now - Head of Scientific Research Department of Baku State University;
- 17.09.2018- Professor (0,5 st.) of Physical Electronics Department;
- 1992-1997 - Responsibility secretary of the editorial board of the scientific journal "Proceedings of Baku State University".
- 1989-2005 - Member of the Presidium of Scientific-Technical Society "Radio Engineering, Electronics and Communication" of the Azerbaijan Republic.

### **2007-Member of the New Azerbaijan Party**

### **Author of 104 scientific publications**

### **PhD students:**

M.A.Ganbarzadeh (Iran)  
L.K. Abdullayeva (BSU)

### **Education, degrees and academic titles**

- 1972 - Physical faculty, Baku State University, specialty - a physicist.
- 1991 - Office of Management and Business Institute of Youth(Baku), specialty - "The organization and equipment of foreign economic activity."

- 1987- scientific degree of candidate of physical and mathematical sciences in a specialty 01.04.10 - physics of semiconductors and dielectrics. Thesis: "Optical properties and electronic structure of polar dielectrics - complex oxides based on transition elements", (Baku State University).
- 2013- scientific degree of doktor of physical sciences in a specialty 2211-01 – solid state physics. Thesis: "Electro-physical parameters, electron structure and mechanism of current transfer of Al-TiW-PtSi/n-Si, Al-TiW-Pd<sub>2</sub>Si/n-Si, Al-TiW/n-Si, AlNi/n-Si, Al-TiCu/n-Si metal-semiconductor contacts" (Baku State University)
- 2009 - academic title of associate professor in the specialty "Physics of semiconductors and dielectrics ".

**Present research interests:** physics of semiconductors and dielectrics, metal-semiconductor contacts, nanoelectronics.

**Overseas business trips:** Russia, Ukraine, Belarus, Lithuania, Latvia, Iran, Turkey

**Participation in International Conferences** 14-th RE Research Conference, North Dakota State Univ., USA,(ABŞ1979; Russia, Chernooqolovka, 1981; Malaga, Spain 1983; Russia , İrkutsk , 1989; International Conference on Solar Energy and the Islamic countries (SEIC), Iran, Tehran,1995; 2 Inter-national Non-Renewable Energy Sources Congress Tehran, Iran, 1998; International Conference on Fluid and Thermal Energy Conversion, Indonesia, Bandung, 2000; The 23 Conference on Solid State Science & Workshop on Physics and Application Potential of Functional Ceramic, Thin Films, Sharm El-Sheikh, Sinai.,Egypt, 2002; XI Yoğun Madde Fiziği, Ankara Toplantısı (Turkey)2004; Türk Fizik Derneği 23.Fizik Kongresi, 2005, Muğla-Turkey ; Atom-Molekul ve çekirdek sistemlerinin yapıları ve spektrumları, Uluslara.Konf., Canak-kale, 18 mart Universitesi(Turkey) 2005; Third Intern. Conference on Technical and Physical Problems in Power Engineering, Ankara (Turkey) 2006; 6-th International Conference of the Balkan Physical Union (BPU-6), , Stanbul (Turkey)2006; Condensed Matter Phys Conference of Balkan Countries cmc- bc2008, Mugla(Turkey).

**Exhibitions:** The organizer of the expositions "Scientific developments of BSU scientists" at the exhibitions of the International (1991-1992) and the Republican (2014,2016,2018) values.

#### LIST OF SELECTED PUBLICATIONS:

1. Mamedov A.M, Lebedeva N.N., Efendieva İ.M. "Domain Structure and Optical Properties of Gadolinium Molibdate", 14-th RE Research Conference, Jun. 25-28, 1979, **North Dakota State Univ.**, USA, 1979.
2. Mamedov, AM; Shilnikov, VI; Efendieva I.M. «Analysis of Ba<sub>2</sub>NaNb<sub>5</sub>O<sub>15</sub> reflection spectra by the Kramers-Kronig method» Optika I Spektroskopiya, v.53, i.1, p.5-7, 1982
3. Mamedov M.A., Osman M.A., Efendieva I.M. "VUV spectra and electron structure of oxygen-tetrahedral ferroelectrics" **V European Meeting on Ferro-electricity.** (Abstracts), **Malaga, Spain**, p.4014, 1983.
4. Osman MA., Mamedov AM .,Efendieva İ.M. " Light-scattering in Gadolinium Molybdate due to domain-structure" **Journal of physics-condensed matter**,v. 2,i.28,1989.“

5. Afandiyeva I.M., Askerov Sh.G., Abdullayeva L.K., Aslanov Sh.S. The obtaining of Al-Ti<sub>10</sub>W<sub>90</sub>/n-Si Schottky diodes and investigation of their interface surface state density. **Solid State Electronics**, 51,2007, p.1096
6. Əfəndiyeva İ.M., Ş.Q.Əskərov, L.K.Abdullayeva,və b.”Al<sub>0,8</sub>Ni<sub>0,2</sub>/nSi diodları ayrılma sərhəddinin electron xassələri” **Fizika**, XIII, №3,2007, s. 62.
7. Afandiyeva I.M., Dökme İ., Altındal Ş.,Bülbül M., Tataroğlu A. Frequency and voltage effects on the dielectric properties and electrical conductivity of Al-TiW-Pd<sub>2</sub>Si/n-Si structures. **Microelectronic Engineering**, 85, 2008, p.247.
8. Afandiyeva I.M., Dökme İ., Altındal Ş., Askerov Sh.G., Abdullayeva L.K. The frequency and voltage dependent electrical characteristics of Al-TiW- Pd<sub>2</sub>Si/n-Si structure using I-V, C-V and G/ω-V measurements. **Microelectronic Engineering**. 85, 2008, p.365.
9. Dökme İ., Altındal Ş., Afandiyeva I.M. The distribution of the barrier height in Al-TiW-Pd<sub>2</sub>Si/n-Si Schottky diodes from I-V-T measurements. **Semiconductor Science and Technology**. 23, 2008, 1.
10. Эфендиева И.М., “Определение эффективной толщины зазора КМП с поликристаллическим металлическим слоем”, **Труды Международной Конференции “Научно-технический прогресс и современная авиация “**, Баку, февр.2009. с.311.
11. Эфендиева И.М., “Исследование электрофизических параметров контактов металл-полупроводник Al-TiCu/n-Si с поликристаллической металлической пленкой” **AMEA-nın Xəbərləri**, Fiz. riy. elm. seriy. XXX, №2, 2010, с.118.
12. Эфендиева И.М., “Фрактальные исследования границы раздела КМП Al-TiCu/n-Si” **Journal of Qafqaz University**,vol.1, 29, 2010, с. 86.
13. Üslü H., Altındal Ş, Aydemir U., Dökme İ., Afandiyeva I.M. The interface states and series resistance effects on the forward and reverse bias *I-V*, *C-V* and *G/-V* characteristics of Al-TiW-Pd<sub>2</sub>Si/n-Si Schottky barrier diodes. **Journal of Alloys and Compounds**, 503,2010, p. 96.
14. Üslü H., Dökme İ., Altındal Ş., Afandiyeva I.M., Illumination effect on I-V, C-V and G/w-V characteristics of Al-TiWPd<sub>2</sub>Si/ n-Si structures at room temperature. **Surface and Interface Analysis**.42, 2010, p.807.
15. Afandiyeva I.M. , Özçelik S, Abdullayeva L.K. Photoluminescence study of metal film’s impact on silicon energetic structure. **Journal of Qafqaz University**,vol.1, 29, 2010, p. 96.
16. Afandiyeva I.M. The temperature, frequency and voltage dependent characteristics of Al-TiW-Pd<sub>2</sub>Si/n-Si structure using *I – V*, *C – V* and *G/ω – V* measurements. **Azerbaijan Journal of Physics - Fizika**, XVI,3-4, 2010, p.102.
17. Afandiyeva I.M. Frequency, voltage and temperature effects on the inductive properties of Al-TiW-PtSi/n-Si Schottky diodes. **AMEA-nın Xəbərləri**, Fiz. riy. elm. seriy. XXXI, №2, 2011,s. 29.
18. Afandiyeva I.M., M.Bülbül, Ş.Altındal, S.Bengi. Frequency dependent dielectric properties and electrical conductivity of Platinum silicide/Si contact structures with diffusion barrier. **Microelectronic Engineering**, **93**, **2012**, p. **50**.
19. I.M. Afandiyeva, S. Demirezen, S. Altındal. Temperature dependence of forward and reverse bias current–voltage characteristics in Al–TiW–PtSi/n-Si Schottky barrier diodes with the amorphous diffusion barrier. **Journal of Alloys and Compounds**, 552 (2013)p. 423–429.
20. Afandiyeva I.M, Ş. Altındal, E. Maril, T. Z. Guliyeva et al. “The investigation of tunnel properties of Al-TiW-PtSi/n-Si (111)(MS) Schottky barrier diodes (SBDs) in the wide temperature range” **Journ. of Qafqaz University**,vol.2 , N2 , 2014, p. 107-118.

21. И.М. Эфендиева, Л.К.Абдуллаева, Т.З.Кулиева, и др. «АС-проводимость диодов Шоттки Al-TiW-PtSi/n-Si» **Journ. of Qafgaz University**, 2015, v.3, N 1. P.49-52.
22. I.M.Afandiyeva, Ş. Altındal, L. K. Abdullayeva et.al. “The frequency and voltage dependent of C-V and G/w-V of Al- TiW-PtSi/n-Si structures at room temperature” **Journ. of Qafgaz University**, 2015, v.3, N 2. P.105-111.
23. Afandiyeva İ.M., Askerov Sh. G., Abdullayeva L.K., et al. “Illumination dependent I-V characteristics of PtSi/n-Si(111) Schottky barrier diodes (SBDS) at room temperature” **Journ. of Qafgaz University**, 2016, v.4 №2, p.106-114.
24. I.M.Afandiyeva, L.K.Abdullayeva, T.Z.Guliyeva, SH.M.Gojayeva “Influence of Illumination on Dielectric Properties of Al-TiW-PtSi/n-Si Schottky Diodes “Baku, Int Confr, “ **Modern trends in Physics**” 22 april 2017, p.33-37, (Baku, Fizfak, 2017)
25. I.M. Afandiyeva, Ş. Altındal, L.K. Abdullayeva “Illumination dependent electrical characteristics of PtSi/n-Si(111) Schottky barrier diodes (SBDs) at room temperature “**J. Modern Technology & Engineering** Vol.2, No.1, 2017, pp.43-56.
26. I.M. Afandiyeva , Ş. Altındal , L.K.Abdullayeva, A.İ.Bayramova ““ Self-assembled patches in PtSi/n-Si(111) diodes” **J. Semicond.** 2018, 39 054002