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Ahmad Salmanogli Khiavi

Personal Information

First Name:	Ahmad
Last Name:	SalmanOgli Xiavi
Birth Date:	March21th 1982
Born in:	Meshkin-IRAN
Hometown:	Meshkin-IRAN

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Mailing Address: No. 5, (part 3), Kohi st., Madraseh St., Golgasht, Tabriz, IRAN

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Education

B. Sc. (2001–2005) Electrical Engineering, Sahand University of technology, Tabriz, IRAN

Thesis:

"The controlling of asynchrony motors' speed by 8051 microcontroller and PLC7"– under the supervision of Dr. M. Banaei

M. Sc. (2005–2007) Electrical Engineering, Tabriz University, Tabriz, IRAN

Thesis:

"The design and Simulation of Er-Silicon nanocrystal doped fiber optical amplifiers" - under the supervision of Dr. A. Rostami

PHD (2017–2021) Electrical Engineering, Hacettepe University, Ankara, Turkey

Thesis:

"Design of a Quantum Radar System with Sustainable Entanglement"– under the supervision of Dr. D. GOKCEN

- Major Areas of Interest
  - Quantum Sensor (Quantum Radar)
  - Quantum Electronics (QED Circuit)
  - Plasmonic & Quantum Plasmonics
  - Quantum Imaging and Quantum communication
  - RF circuits (Radar receiver, PA, LNA, Filters, and ….)
  - Plasmonic based nanobiosensor and nanosensor
  - Plasmonic-photonic based imaging sensors
  - Portable Bio-chip for early and easily detection of breast cancer cells
  - Raman and Fluorescence signals Enhancing by plasmonic and nonoplasmonic
  - Mathematical Programming in MATLAB, COMSOL, ADS, Proteus, and C++

Academic Honors and Awards

- Ranked 282th among about 30,000 participants in the national university entrance exam to apply for M.Sc. degree in Electronic Engineering program.
- Ranked 317th among about 200,000 participants in the nationwide university entrance exam for B.Sc. degree, “Konkoor-e Sarasari”.
- Third Place among the students of Electrical Engineering (2001-2005, Sahand University of Technology, Tabriz, IRAN), Total GPA: 16.53/20.00
- Second Place among the M.Sc. students of Electrical Engineering (2005-2007, Optical Electrical engineering, Faculty of Tabriz University, Tabriz, IRAN), Total GPA: 18.22/20.00
- The award of the best engineer in the Iranian Electronic Institute in 2010

Research and Computer Skills

- Good experience with programming languages and familiar with the following programming environments:
  - MATLAB
  - COMSOL Multiphasic
  - ADS (advanced design system)
  - Proteus
  - C++
  - MAPLE
  - C-8051
  - PLC (S7)

Research Projects

- Design and modeling of Sustainable Entanglement Quantum Radar system
- Cryogenic LNA for Quantum Computing
- Quantum Imaging (Image Resolution Enhancing by the Quantum entanglement)
- RF circuits design and implementation (LNA, PA, and Radar receiver)
- Design and modeling of Plasmonic based nanobiosensor for early and easily detection of the breast cancer
- Theoretical modeling of Raman and Fluorescence signals enhancing by portable nanosensor
- Solution based Raman signal enhancing by core/shell nanoparticles
- Manipulation of optical force by plasmonic-photonic interaction
- Design and assembling of the tune tracking algorithm for cancer site with nano-bio-sensors (biomedical assays stage)
- Design, Simulation, and Implantation of Tumor Tune Targeting by using of Smart Nano-Sensors Communications
- lab on a chip: Cell Separation by Nanoparticle optical force
- Breast Cancer detection portable Bio-chip: Design and simulation
- Design and simulation of silicon nanocrystal and ER doped fiber amplifier

Patents and publications and presentations

1) **IR Patent**: A. Salmanogli, Portable In-vitro & In-vivo Imaging System in the Low Photon Condition Based on the Plasmonic-Photonic Virtual Mask image processing system, 2016.
1) A Salmanogli, D Gokcen, Design of Quantum Sensor to Duplicate European Robins Navigational System, **Sensors and Actuators A: Physical**, 112636, 2021.
2) Ahmad Salmanogli, Dincer Gokcen, Entanglement Sustainability Improvement using Optoelectronic Converter in Quantum Radar, **IEEE Sensor Journal**, 2021.
3) Ahmad Salmanogli, Dincer Gokcen, H. Selcuk Geçim, Entanglement Sustainability in Quantum Radar, **IEEE Journal of selected Quantum Topics in Electronics**, 26 (6), 1-11, 2020.
4) Ahmad Salmanogli, Dincer Gokcen, Analysis of Quantum Radar Cross-Section by Canonical Quantization Method (Full Quantum Theory), **IEEE Access** 8, 205487-205494.
5) Ahmad Salmanogli, Hüseyin Selçuk Geçim, Optical and Microcavity Modes Entanglement by means of Developed Opto-Mechanical System, **IEEE Journal of selected Quantum Topics in Electronics**, 2020.
6) Ahmad Salmanogli, Modification of the Plasmonic Nanoparticle Life-time by the Coupled Quantum Dots, **Phys. Rev. A**, 2019.
7) Ahmad Salmanogli, Dincer Gokcen, Identification of Circulating Tumor Cells Using Plasmonic Resonance Effect: Lab-on-a-ChipAnalysisandModelling, **J. Nanosci. Nanotechnol**. 20, 1341–1350, 2020.

8) Ahmad Salmanogli, Dincer Gokcen, H. Selcuk Geçim, Optical and Microcavity Modes Entanglement by means of Opto-Electronics System, **PHYSICAL REVIEW APPLIED** 11, 024075 (2019).
9) A Salmanogli, D Gokcen, HS Gecim, Plasmonic Effect on Quantum Dot Photodetector Responsivity, **IEEE sensors Journal,** 2019.
10) A. Salmanogli, Entangled two-photon interference, **Optik,** 179, 909-913, 2019.
11) A. Salmanogli, Raman mode non-classicality through entangled photon coupling to plasmonic modes, **Journal of the Optical Society of America B**, 35, 2467-2477, 2018.
12) A. SalmanOgli, H. S. Geçim, Quantum Eye: Lattice Plasmon effect on Photon detection, **Annals Physics**, 2018.
13) Ahmad Salmanogli, H. Selçuk Geçim, Plasmonic System as a Compound Eye: Image Point-spread Function Enhancing by Entanglement, **IEEE sensors Journal**, 2018.
14) A.Salmanogli, H. S. Geçim, Array of Nanoparticles Coupling with Quantum-dot: Lattice Plasmon Quantum Features**, Physica E: Low-dimensional Systems and Nanostructures** 100 (2018) 54-62.
15) A. SalmanOgli, Raman Modes Non-classicality through Entangled Photons Coupling to Plasmonic Modes, **arXiv:1803.04760 [quant-ph]**, 2018.
16) **A**. SalmanOgli, K. Salimi, Lattice plasmon effect on imaging resolution: Point-spread function enhancing, **Sensors & Actuators: A. Physical**, 2017.
17) **A**. SalmanOgli, B. Nasseri, E. Piskin, Highly Field Enhancement by Plasmonic Field Engineering in Random Distribution of Au-Au Nanoparticles as SERS Structure, **Journal of Luminescence**, 2017.
18) A. Salmanogli, Quantum-Plasmonic Interaction Analyzing with Full-Quantum-Theory (Core/shells NPs Plasmon-Plasmon Interaction effect on QDs), **physical review A**, 2016.
19) **A**. SalmanOgli, B. Nasseri, E. Piskin, Plasmon-Plasmon Interaction effect on Reproducible Surface-Enhanced Raman Scattering for Dye Molecule Detection, **Sensors & Actuators: A. Physical**, 2017.
20) **A**. SalmanOgli, K. Salimi, Sensitive Plasmonic-Photonic Nanosensor as a Morphologic Mask, **Optical Materials**, 2017.
21) A. SalmanOgli, B. Nasseri, M. Yazdani, E. Piskin, Plasmon-Plasmon Interaction Effect on Effective Medium Electrical Conductivity (an Effective agent for Photothermal Therapy), **Current Applied Physics**, 10.1016/j.cap.2016.08.021, 2016.
22) E. Sanattalab, A. SalmanOgli, E. Piskin, Analysis and modeling of localized heat generation by tumor-targeted nanoparticles (Monte Carlo methods), **J. Nanophoton**. 10(2), 026029 (2016).
23) O. E. Haberal, A. SalmanOgli, B. Nasseri, Low Noise Patch-Clamp Current Amplification by Nanoparticles Plasmonic-Photonic Coupling (Analysis and Modeling), **IET Nanobiotechnology**, 2016.
24) A. SalmanOgli, F. Farhadnia, E. Piskin, Separation by Nanoparticles Plasmonic Resonance with Low Stress in Microfluidics Channel (Analytical and Design), **IET Nanobiotechnolgy**, 2016.
25) A. Salmanogli, A. Rostami, M. franoush, M. Dolatyari, Gh. Rostami, E. Piskin, Design of a portable nanosensor for easy breast tomography, **RSC Adv**., 2015,**5**, 19002-19013.
26) A. Salmanogli, A. Rostami, M. franoush, M. Dolatyari, Gh. Rostami, Enhancement of tumor smart-targeting efficiency based on optical communication between signaling and receiving nanoparticles (modeling and analysis), **RSC Adv**.,2014,4, 30984–30992.
27) A. Salmanogli, A. Rostami, S. behzadi, Simulation of Optical Signaling among Nano-Bio-Sensors: Enhancing of Bio-Imaging Contrast, **IEEE Transactions on NanoBioscience**, DOI 10.1109/TNB.2014.2311834, 2014.

28) A. Salmanogli, A. Rostami, Investigation of electronic and optical properties of (CdSe/ZnS/CdSe/ZnS) quantum dot-quantum well heteronanocrystal, **J Nanopart Res**, vol. 13, pp. 1197-1205, 2010.
29) A. SalmanOgli, Nanobio applications of quantum dots in cancer: imaging, sensing, and targeting,"**Cancer Nano**, vol. 2, pp. 1-19, 2011.
30) H. Absalan, A. Salmanogli, R. Rostami, S. Maleki, Design and Simulation of Fluorescence Resonance Energy Transfer between Modified Quantum Dot (Core/Defect/Shell) Heteronanocrystal and Dye-Molecule,", **Advanced Science, Engineering and Medicine**, vol. 4, pp. 1–7, 2012.
31) H. Absalan, A. Salmanogli, R. Rostami, A. Maghoul, Simulation and investigation of quantum dot effects as internal heat-generator source in breast tumor site,",**Journal of Thermal Biology**, vol. 37, pp. 490–495, 2012.
32) A. Salmanogli, A. Rostami, Modeling and Improvement of Breast Cancer Site Temperature Profile by Implantation of Onion-Like Quantum-Dot Quantum-Well Heteronanocrystal in Tumor Site, IEEE transaction on Nanotechnology, **IEEE transaction on Nanotechnology**, 11,1183-1191, 2012.
33) A. Salmanogli, A. Rostami, Design and Simulation of Nano-Bio Sensors for Dye Molecules Targeting: to Enhance Targeting Efficiency (smart targeting), **IEEE transaction on NanoBioscience**, 2012., 12, 21-28.
34) A. Salmanogli, A. Rostami, M. Abasi, Simulation of Tumor Targeting Enhancement by Amplifying of Targeted Nano-Biosensors Radiation Intensity, **IEEE transaction on Biomedical engineering**,60, 1328-1335, 2012.
35) A. Salmanogli, A. Rostami, Design and Simulation of Perturbed Onion-Like Quantum-dot-Quantum-well (CdSe/ZnS/CdSe/ZnS) and its Influenceon Fluorescence Resonance Energy Transfer Mechanism, **IEA Nanobiotechnology**, 2013, DOI:10.1049/iet-nbt.2011.0069.
36) A. Salmanogli, A. Rostami, Investigation of Surface Plasmon Resonance in Multi-layered Onion-Like Heteronanocrystal Structures, **IEEE transaction on Nanotechnology**, 12, 831-839, 2013.
37) A. Salmanogli, A. Rostami, Chromatic dispersion behavior of Si-NC–Er doped optical fiber, **Optics Communications** 281 (2008) 4530–4535
38) A. Rostami, A. Salmanogli, Investigation of light amplification in Si_NanocrystalEr doped fiber amplifier," **Progress In Electromagnetic Research B**, vol. 9, pp. 27-51, 2008.
39) A. Salmanogli, A. Rostami, Study of Effects of inhomogeneous distribution of cooperative up-conversion coefficient on the optical amplification process in the Si_Nc and Er doped optical fiber**, Progress in Electromagnetic Research C**, 2008.
40) M. Meydanchizade, A. SalmanOgli, The Study of Effects of Inhomogeneous Distribution of Dopants in the Si-Nc-Er doped Optical Amplifier, **Optik**, 123 (2012) 1140– 1145.
41) A. Salmanogli, A. Rostami, Plasmon Modes Hybridization Influence on Nano-Bio-Sensors Specification, **IEEE transaction on Nanotechnology**, 12, 858-866, 2013.
42) A. Salmanogli, A. Rostami, Simulation of Optical Signaling among Nano-Bio-Sensors: Enhancing of Bio-Imaging Contrast, **IEEE transaction on Nanotechnology**, DOI: 10.1109/TNB.2014.2311834, 2014.
43) H. Absalan, A. Salmanogli, R. Rostami, A. Maghoul, Simulation of a broadband nano-biosensor based on an onion-like quantum dot – quantum well structure, **Quantum Electronics** 43 (7) 674 – 678 (2013).
44) A. Salmanogli, R. Rostami, Engineering of perturbation effects in Onion-Like Heteronanocrystal Quantum dot-quantum well, **Optics Communications**, 306, 2013, 106–112.

45) A. Salmanogli, A. Rostami, Investigation of potential profile effects in quantum dot and onion-like quantum dot-quantum well on optical properties, **Optics Communications** 318 (2014) 26–30.
46) A. Salmanogli, A. Rostami, Investigation of Si-Nanocrystal-Er doped Optical Fiber Amplifier, **ISOT Conference**, 2007 Switzerland.
47) A. Salmanogli, A. Rostami, Effects of Optical Losses on Characteristics of Silicon Nanocrystal-Er doped Fiber Amplifier, **HUT-ICCE** (Communications and Electronics, ICCE 2008. Second International Conference on).
48) A. Salmanogli, Simulation of Nd: YAG Laser, Lasers & Electro Optics &the Pacific Rim Conference on Lasers and Electro-Optics, 2009. CLEO/PACIFIC RIM '09. Conference.
49) 8 other conference papers

Under review articles

1. A. Salmanogli, Entanglement Engineering by Transmon Qubit in a Circuit QED, arXiv preprint arXiv:2109.00316, 2021
2. A. Salmanogli, An Exact Method using Quantum Theory to Calculate the Noise Figure in a Low Noise Amplifier, arXiv preprint arXiv:2108.05037, 2021
3. A. Salmanogli, Entanglement Generation using Transistor Nonlinearity in Low Noise Amplifier, under review by Physical Review Applied, 2021.
4. Design of the Cryogenic ultra-Low Noise Amplifier for Quantum Computing, 2021.

Working Experience

- Control Engineer in chemical and petroleum of TABRIZ (for 4 months)
- Power electronic engineer in Electrical Distribution of TABRIZ center (TAVANIR) (for 5 months)
- Optical electronic engineer in Electronic institute of IRAN (for 52 months)
- Project manager and engineer of design of Nd: YAG Laser and Nanocrystal optical amplifier for AZAD and Payame NOOR University (for 8 months)
- Nankavoshgarane ARAZ: RF circuit design (PA, LNA, Filters and radar receiver) (2010-2012)
- European project entitled “nanobacteriophageSERS” in Hacettepe university, Turkey, 2014-2016.
- Research Assistant in Cankaya University, Ankara, Turkey, 2018-…

Educational Workshops

- PLC Workshop
- Field Bus Workshop
- Optoelectronic Workshop

Language skills

- Azerbaijani and Persian: Native
- Turkish: Good
- English: Good

Teaching Experience

Teaching Assistantship:

- **Analog CMOS Design and Theory** (Cankaya University) 2019-…
- **RF Circuit theory and design** (Cankaya University) 2018-…
- **Electronics III** (Cankaya University) 2019-…
- Introduction to Electronics (Cankaya University) 2017-…
- Electrical Circuit Theory (I and II) (Cankaya University) 2017-…
- Electronics I and II Labs, (Cankaya University) (Cankaya University) 2017-2019
- Electronics I,II, Labs /Electrical Engineering Department of Tabriz University, 2005-2007
- Electronics I,II, Mathematical Engineering, (B. Sc.) /Electrical Engineering Department of Sahand University of technology, 2002-2005
- Modern Control, C^{++}(B. Sc.) /Electrical Engineering Department of Sahand University of technology, 2002-2005