

## Curriculum vitae

Assoc. Prof. Ferhat NUTKU



## Contact information

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## Degrees

2006-2012 PhD. Physics, Istanbul University, Istanbul, Turkey

Thesis Entitled "*An Investigation of Electronic Transport Processes in Low Dimensional Semiconductor System*"

[Supervised by Prof. M. Çetin Arıkan]

2001-2003 MSc. Physics, Istanbul University, Istanbul, Turkey

Thesis Entitled "*Nondestructive Tests of Powder Metallurgy Parts*"

[Supervised by Prof. Ahmet Topuz]

1995-1999 BSc. Physics, Istanbul University, Istanbul, Turkey

## Employment

2017 - Associate Professor, Department of Physics, Istanbul University

2006 - 2017 Research Assistant, Department of Physics, Istanbul University

2005 - 2006 Software Developer in RND New Media Solutions

2005 - 2005 Senior Software Developer in Bilnet Yazılım

## Visiting Positions

## Scholarly activities

2013 Organizing Committee Member, COST Action MP0805 "Novel Gain Materials and Devices Based on III-V-N/Bi Compounds", September 2013, Istanbul

2006 Organizing Committee Member of "International Conference on Superlattices, Nanostructures and Nanodevices (ICSNN 2006)", Istanbul

## Research Areas

Low dimensional semiconductors, electronic, magneto-transport properties in low dimensional semiconductors, design and characterization of electronic devices

## Supervised Thesis

## Membership of Professional Societies

## Awards

## Computer skills

Python (NumPy, SciPy, SymPy etc.), C, C++, Fortran 77, Mathematica

## Publications

### SCI Papers

F. Nutku\*, M. Ç. Arıkan, A. Erol, Y. Ergün, and E. M. Kendirlik, "I-V characterization of a staircase quantum well infrared photodetector," *Phys. Status Solidi (C)*, vol. 8, no. 5, pp. 1633–1636, May 2011.

<http://onlinelibrary.wiley.com/doi/10.1002/pssc.201000793/abstract>

F. Nutku, A. Erol\*, M. Gunes, L. B. Buklu, Y. Ergun, and M. C. Arıkan, "I–V characterization of a quantum well infrared photodetector with stepped and graded barriers," *Superlattices Microstruct.*, vol. 52, no. 3, pp. 585–593, Sep. 2012.

<http://dx.doi.org/10.1016/j.spmi.2012.06.010>

O. Donmez, F. Nutku\*, A. Erol, C. M. Arıkan, and Y. Ergun, "A study of photomodulated reflectance on staircase-like, n-doped GaAs/AlxGa1-xAs quantum well structures," *Nanoscale Res. Lett.*, vol. 7, no. 1, p. 622, Jan. 2012.

<http://dx.doi.org/10.1186/1556-276X-7-622>

F. Nutku\*, A. Erol, M. C. Arıkan, and Y. Ergun, "Zero-bias offsets in I–V characteristics of the staircase type quantum well infrared photodetectors," *Appl. Surf. Sci.*, vol. 318, pp. 95–99, Nov. 2014.

<http://dx.doi.org/10.1016/j.apsusc.2014.01.054>

F. Nutku\*, "Quasi-bound levels, transmission and resonant tunneling in heterostructures with double and multi rectangular, trapezoidal, triangular barriers," *J. Comput. Electron.*, vol. 13, no. 2, pp. 456–465, 2014.

<http://dx.doi.org/10.1007/s10825-014-0556-1>

F. Nutku\*, O. Donmez, F. Sarcan, A. Erol, J. Puustinen, M. Ç. Arıkan, and M. Guina, "Negative and positive magnetoresistance in GaInNAs/GaAs modulation-doped quantum well structures," *Appl. Phys. A*, vol. 118, no. 3, pp. 823–829, March 2015.

<http://dx.doi.org/10.1007/s00339-014-8852-y>

F. Nutku\* and E. Aydın, "Current and efficiency of Brownian particles under oscillating forces in entropic barriers," *Chinese Phys. B*, vol. 24, no. 4, p. 040501, April 2015.

<http://dx.doi.org/10.1088/1674-1056/24/4/040501>

F. Sarcan, F. Nutku, O. Donmez, F. Kuruoglu, S. Mutlu, A. Erol, S. Yildirim, and M. C. Arıkan, "Quantum oscillations and interference effects in strained n- and p-type modulation doped GaInNAs/GaAs quantum wells," J. Phys. D. Appl. Phys., vol. 48, no. 30, p. 305108, Aug. 2015. <http://dx.doi.org/10.1088/0022-3727/48/30/305108>

F. Nutku\* and E. Aydın, "Current and efficiency optimization under oscillating forces in entropic barriers," Chinese Phys. B, vol. 25, no. 9, p. 90501, Sep. 2016. <http://dx.doi.org/10.1088/1674-1056/25/9/090501>

F. Nutku, O. Donmez, E. Cokduygular, F. Sarcan, F. Kuruoglu, S. Mutlu, S. Yildirim, and A. Erol\*, "Effect of thermal annealing and nitrogen composition on quantum transport in GaInNAs alloy based modulation doped quantum well structures," J. Alloys Compd., vol. 695, pp. 404-409, Feb. 2017. <http://dx.doi.org/10.1016/j.jallcom.2016.11.101>

Ü. D. Göker, J. Singh, F. Nutku, and M. Priyal, "Temporal variations of different solar activity indices through the solar cycles 21-23," Serbian Astron. J., vol. 195, no. 195, pp. 59–70, Aug. 2017. <http://dx.doi.org/10.2298/SAJ1795059G>

Cetinkaya, C., Cokduygular, E., Nutku, F\*, Donmez, O., Puustinen, J., Hilska, J., Erol, A. and Guina, M. (2018) 'Optical properties of n- and p-type modulation doped GaAsBi/AlGaAs quantum well structures', Journal of Alloys and Compounds, 739, pp. 987–996. doi: 10.1016/j.jallcom.2017.12.261. <http://dx.doi.org/10.1016/j.jallcom.2017.12.261>

### **Non SCI Papers**

NUTKU, F., "Using Maxima Software In Physics", Balkan Physics Letters, 2009, vol.16, 161014

NUTKU, F., "Quantum well infrared photodetectors", Fizik İstanbul Dergisi, December 2013, p. 34-36.

Goker, U. D.\*, Singh, J., Nutku, F., & Priyal, M., "A Statistical Analysis of Solar Surface Indices Through the Solar Activity Cycles 21-23", Arxiv, (April 2016). Retrieved from <http://arxiv.org/abs/1604.03011>

T. Erucar, F. Nutku\*, O. Donmez, and A. Erol, "Electronic bandstructure of semiconductor dilute bismide structures," in Turkish Physical Society 32nd International Physics Congress (TPS32) AIP Conf. Proc. 1815, 050004-1–050004-4, 2017, vol. 50004, p. 50004. <http://dx.doi.org/10.1063/1.4976382>