PAMUKKALE UNIVERSITY
FACULTY OF ARTS AND SCIENCES

PHYSICS DEPARTMENT

Pamukkale – Denizli

http://pau.edu.tr/fizik/en

@PauFizik

HISTORY

- 1992 Department of Physics was founded.
- 1994 Undergraduate Program of Physics.
- 1994 The Graduate (M.Sc) Program of Physics.
- 1995 The Secondary Education Undergraduate program of Physics.
- 2008 PhD Program in Physics has started.

SUBDIVISIONS OF PHYSICS DEPT.

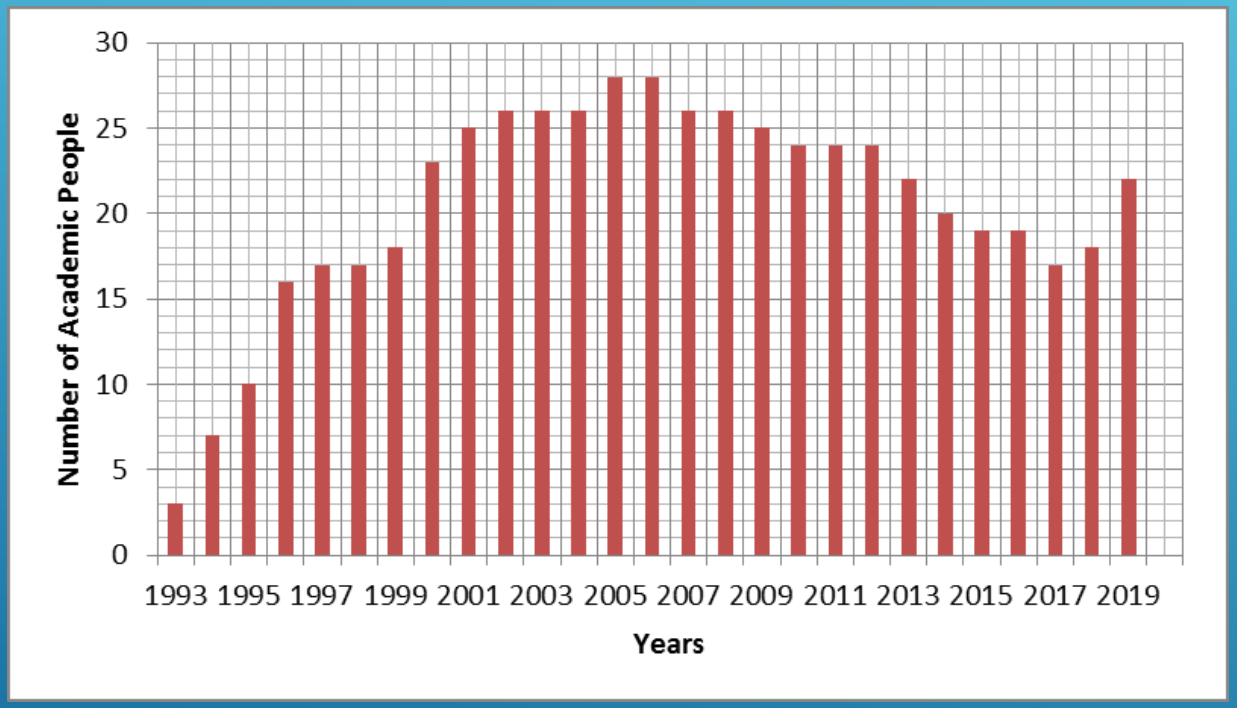
1. Atomic and Molecular Physics
2. Solid State Physics
3. Nuclear Physics
4. General Physics
5. Mathematical Physics
6. High Energy and Plasma Physics

MISSION AND VISION

To give physics education and research at international level in the light of science and universal values.

To create a thematic department in the field of applied physics where graduates can easily find jobs.

ACADEMIC STAFF



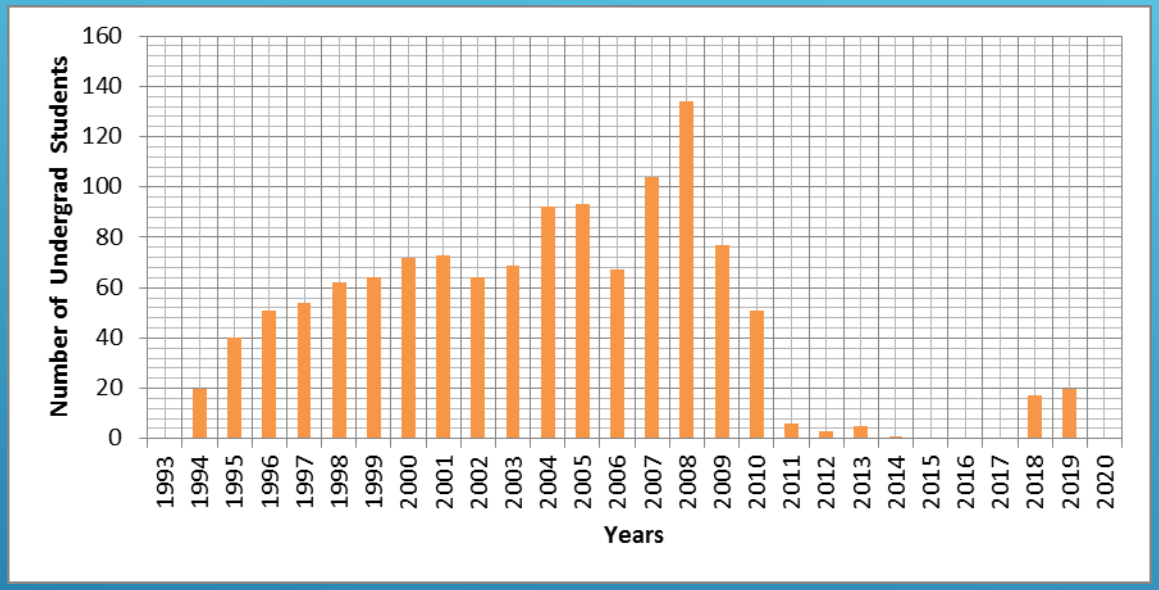
Numbers of Positions:

Prof.Dr. :	6
Assoc. Prof.Dr. :	2
Assist. Prof.Dr:	5
Dr. Instructor :	1
Instructor:	2
Dr. Research Assist.:	1
Specialist:	2
Research Assist. :	3

TOTAL: 22

There would have been a total of 35 people if no one had never left.

NUMBER OF STUDENTS (UNDERGRADUATE)



1994 (undergraduate) started

Secondary Educ. started in 1995

2010 SE section is closed

2014 Day time Undergraduate is closed

As of February 2019 there are 32 active students (75 students in total).

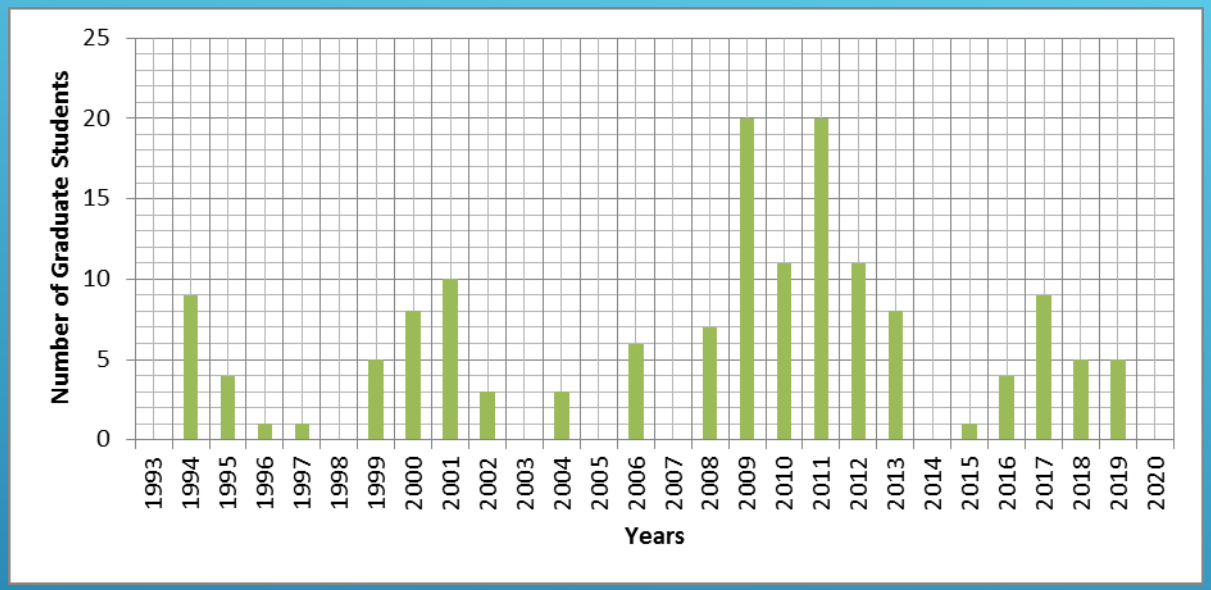
BUT, SERVICE COURSES!

EngF+TechF+ScienceF+Physics (Grad and Undergrad) = 2.584 different students

Number of Students / Number of Lecturer= 2.584 / 16 = 161 students/lecturer

As of November 2019

NUMBER OF STUDENTS (GRAD)



1994 M.Sc started

2008 PhD started

As of March 2019 **20** graduate students.

WEEKLY COURSE LOADS

Lesson hours includes only in classroom courses!

(UG+Grad) NE: 191 + SE: 45 = 236 hrs/week

Course hrs/week/Nbr. of Lecturer

NE 191/16 = 12 hrs/(week per lecturer)

SE 45/13 = 4 (hrs/week per lecturer)

!!! (NE+SE) Lab (Physics+ EngF + TechF) : 76 hrs/week [3 RA+2 Specialist] !!!

[10 hours Lab load/week per RA/Specialist]

STUDENT LABORATORIES

1. General Physics Lab. I
2. General Physics Lab II
3. General Physics Lab. III
4. Optical Lab.
5. Magnetism Lab.
6. Electronic Lab.
7. Atomic and Nuclear Phys. Lab

GENERAL PHYSICS-I LAB

All first year students of the Faculty of Engineering and the Faculty of Technology perform basic mechanical experiments.

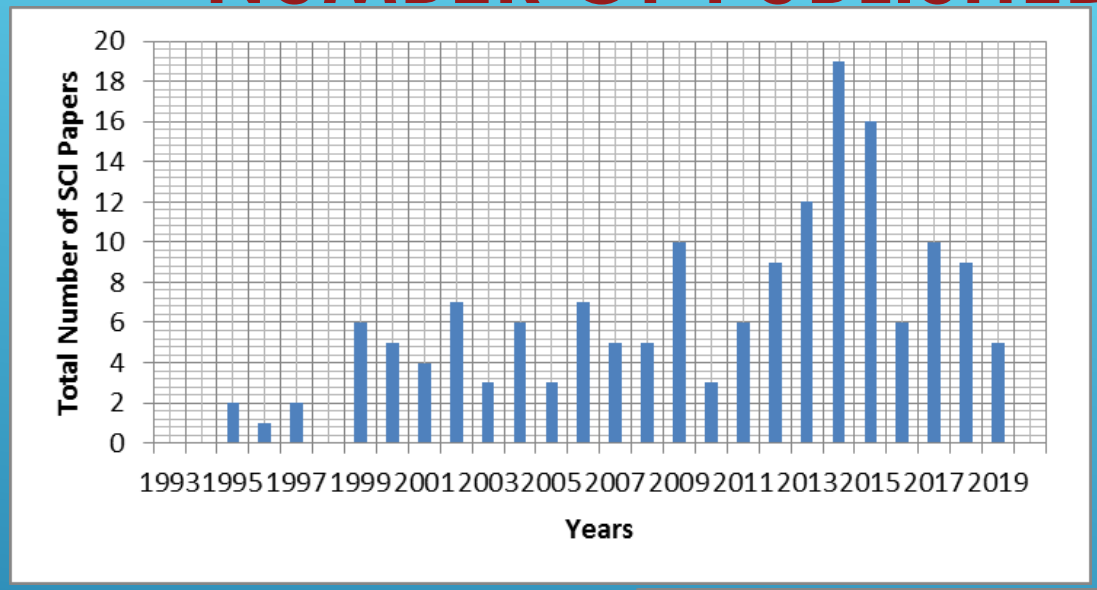
GENERAL PHYSICS-II LAB

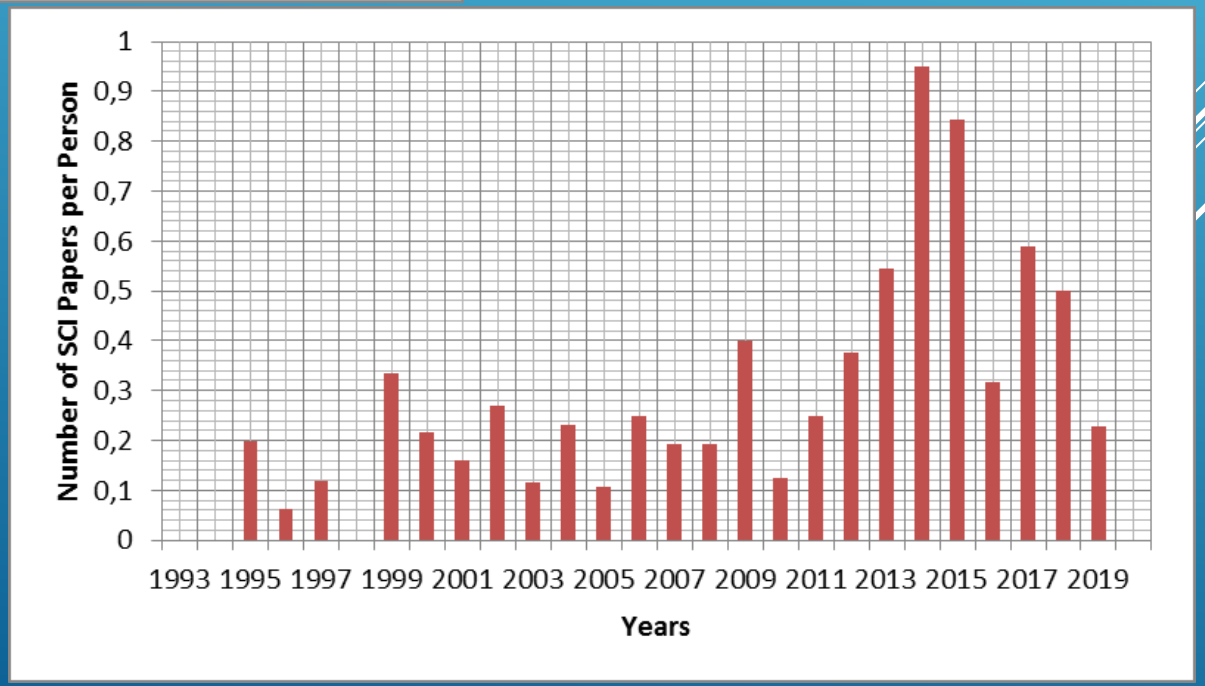
All the first year students of the Faculty of Engineering and the Faculty of Technology perform electricity and magnetism experiments.

RESEARCH TOPICS

- Investigation of electrical and magnetic properties of superconductors.
- Spinor, dilaton and gravitation models in non-Riemannian space-time.
- Investigation of thermodynamic and conduction properties of metals and alloys, semiconductor materials and nanostructures by molecular dynamics and ab initio method.
- Age determination by optical stimulated luminescence method.
- Crystal growth, electrical and optical properties.
- Thermal evaporation of thin films, determination of electrical and optical properties.
- Determination of radicals and radiation damage centers of gamma irradiation by electron paramagnetic resonance (EPR) spectroscopy.
- Determination of structural, electrical and optical properties of nano materials, biological and chemical molecules and chemical reaction mechanisms. Theoretical validation of new substance synthesis. Physical and chemical mechanisms of biological molecules.

NUMBER OF PUBLISHED ARTICLES





RESEARCH LABORATORIES

1. Computational Physics Laboratory
2. Materials Physics Simulation Laboratory
3. Single Crystal Sample Preparation Laboratory
4. Semiconductor Growth and Characterization Laboratory
5. Luminescence (OSL) Laboratory
6. Superconductivity and Conductivity Measurement Laboratory

COMPUTATIONAL PHYSICS LABORATORY

Simulation of Nano materials; the structural, electrical, optical properties and chemical reaction mechanisms of biological and chemical molecules.

MATERIALS PHYSICS SIMULATION LABORATORY

- Solid, liquid and glassy structures, thermodynamic and conduction properties of metal and metal alloys, nanoparticles and Core -Shell nano particles by Molecular Dynamic Method.
- Analysis of structural, electronic, optical and magnetic properties of semiconductor and shape memory materials by Density Functional Theory Method,
- Analysis of chemical and biological molecules by computational quantum chemical methods.
- Investigation of stress-corrosion mechanism in metal and metal alloys with Density Functional Theory

SINGLE CRYSTAL SAMPLE PREPARATION LABORATORY

Single crystal organic and **inorganic** samples are obtained by using various solvents. The resulting samples are irradiated by gamma irradiation source located at **Turkish Atomic Energy Agency (TAEK) SANAEM**. Thus, the analysis of the radiation damage centers of the paramagnetic samples by radiolysis is also carried out in **the EPR Laboratory** located in the same center.

SEMICONDUCTOR GROWTH AND CHARACTERIZATION LABORATORY

In our laboratory; binary, ternary and quaternary semiconductor thin films belonging to II-VI, I-III-VI, II-III-VI and I-II-IV-VI groups are produced by **E-beam** and **thermal evaporation techniques** and their electrical and optical characterizations are determined.

LUMINESCENCE (OSL) LABORATORY

Personal and environmental dosimeter studies can be carried out by using **luminescence methods**. Besides, dating of geological, archaeological materials, and the radiation dose determination of treatments or radiation therapy studies are performed in this lab.

SUPERCONDUCTIVITY MEASUREMENT LABORATORY

In our laboratory, measurement and analysis of conductivity, inductance and levitation forces of YBCO(123), YBCO(358) and BSCCO high temperature superconductors are made by using various dopants and different production techniques.

THANKS!!!

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