

WOMEN IN PHYSICS IN SPAIN

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Historically, Physics has received small attention in Spain by sociological and religious reasons. During XVI and XVII centuries, Spanish universities were closed to the outside influences in order to prevent heresy while Spanish kings were fighting Reform in Europe. The Spanish Physics and Chemistry Society was founded at 1903, and in 1907 the first Physics Laboratory was created by the so-called *Junta de Ampliación de Estudios* (JAE). During the period 1936-1939 the scientific activity was cut by the civil war and many scientists went out of Spain by political reasons.

The first contact with Physics at the school is at the age of 13. Physics is taught together with Chemistry and the teachers are usually Chemists. The first-level degree in Physics is referred as *Licenciado en Físicas*. It is a degree of 4 or 5 years and the total number of universities that give this degree is 19. The average of female students in this first degree is between 25% and 30%. The highest-level degree in Physics Ph.D is referred as *Doctor*. It is obtained at the universities that give the degree in Physics although the Ph.D thesis can be done as well in any research institution. Although the ratio of female professors is about 25%, the highest position, full professor, is only reached by 3% at the Physics Departments.

TABLE I : Percentage of women at each level of the universities.

WOMEN FACULTY MEMBERS (ALL FIELDS). ACADEMIC YEAR 1997/98		
LEVELS	TOTAL	WOMEN
Full professors and professors	47,944	30.9%
Professors under temporary contract	31,103	32.7%
Assistant professors	6,874	42.5%
TOTAL	85,921	33.3%
WOMEN FACULTY MEMBERS IN THE PHYSICS DEPARTMENTS. ACADEMIC YEAR 1997/98		
Full professors (Catedráticos)	443	2.9%
Professors (Titulares)	1,488	25.2%
Professors under temporary contract (Asociados)	422	21.7%
Assistant professors	255	27.9%
TOTAL	2,608	21.0 %

In 1939 the *Consejo Superior de Investigaciones Científicas* (CSIC, www.csic.es) was founded using the facilities of the former JAE, with the purpose of undertaking scientific and technological research in all branches of knowledge. Nowadays, the CSIC has a permanent staff of around 4500 persons arranged as follows: 2000 persons are scientific staff, 1800 persons are support staff and 700 persons work as administrative

or in other positions. In addition, 2000 persons are scientific training staff. The general ratio of women in the scientific staff is 30%. At the executive board (Chairman (head of the staff), Vice-Chairmen and Management board) the presence of women is around 19%. The scientific staff is divided in three levels and in general the ratio of women in the highest level is only 13.3%, but this proportion decreases in the areas related with Physics as it can be seen in Table 2.

TABLE 2 : Percentage of women at each staff level of the CSIC for the Physic Sciences and Technology fields.

LEVELS	MEN	WOMEN	TOTAL	% WOMEN
PROFESSOR OF RESEARCH	92	5	97	5
RESEARCH SCIENTIST	105	29	134	22
SCIENTIST	228	114	342	33
TOTAL	427	149	576	26

The ratio of female members at the Spanish Physical Society (Real Sociedad Española de Física, RSEF, www.ucm.es/info/rsef) is 19%. Although the society is open to all physicists, the members are mainly university professors and researchers. From a total of 53 members in the Board of the Society, only 6 (11%) are females and only 2 of them have a responsibility charge: the General Secretary and the Editor of the periodical magazine of the society. The RSEF organizes special programs (Physics on Stage) coordinated with several European institutions (CERN, ESA, ESO) to attract the students to study physics.

Other professional societies have a more important female participation. For example, the Graduate Association (*Colegio de Licenciados*) grouped all professionals involved in the teaching at the secondary school. Since this professional activity is one of the most followed by the women, the female rates in this association are higher than in other professional organizations. Due to administrative problems it is difficult to estimate the female physicists rate in the teaching activity at this secondary level but we estimate that it is about 50%.

Medical Physics is other area of importance for the women activities in Spain. The Spanish Society of Medical Physics (www.sefm.es) grouped 345 physicists that develop their professional activity in this area. The female rate in this association is 29% and the women rate in the highest level (Head of the Medical Physics Department) is 28%.

There are enormous difficulties in finding good gender desegregated statistics, data or general information concerning the female rates at the industry field in our country. Women at the top levels of the companies (managers/presidents of companies or head of department) are lower than 10%. In the Report from the ETAN Expert Working Group on Women and Science (EC, 2000) it is estimated that the percentage of female managers/presidents of Spanish companies taking part in research projects is around 4%. The lack of gender divided statistics is a general problem in Spain since most of the institutions do not deal with the women status at work. In 1983 the Women Institute was created (Ministry of Work and Social Affairs, www.mtas.es) to defend women rights and to promote gender equality. Recently, the first divided gender statistic ("*Mujeres en cifras*") has been published by the Women Institute.