



*Redakcja Sekcji Fizyki „Annales Universitatis  
Mariae Curie-Skłodowska”, koledzy oraz przy-  
jaciele i uczniowie Profesora Stanisława  
Szpikowskiego poświęcają Mu niniejszy tom  
dla uczczenia 60 rocznicy urodzin*

*Editors of Physics' Section of the Journal  
"Annales Universitatis Mariae Curie-Skło-  
dowska", colleagues, friends and pupils of  
Professor Stanisław Szpikowski dedicate him  
this volume on occasion of his 60th birthday*



ANNALES  
UNIVERSITATIS MARIAE CURIE-SKŁODOWSKA  
LUBLIN—POLONIA

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**Foreword**

A university professor at sixty is young enough to expect from him further achievements, in research, teaching, and the organization of academic activities. But he is also mature enough to have already achieved a lot in these areas of academic life. Therefore, convinced that in the years to come, new outstanding achievements of Professor Szpikowski, as well as of his present and future disciples and assistants, will continue to abound, let us briefly, if possible, summarize his first sixty years. We are very pleased to note at this point, too, that, celebrating his sixtieth birthday, Professor Szpikowski is a man not only of remarkable intellectual capacity but also equally remarkable physical vitality, a condition that the undersigned has personally observed on many occasions mountaineering and sailing with him.

Biographical details are presented subsequently by Professor Szpikowski's assistants, therefore let me concentrate here on his three most important achievements which, among other things, justify the present occasion. They are: 1) the creation of a center for the study of theoretical physics at UMCS, 2) the contribution to the establishment of the Institute of Physics at UMCS, and 3) the significance of the results of his own scientific research, chiefly in the field of theoretical nuclear physics.

Let us now discuss each of these points at greater length.

1) The creation of a scientific center offering high-level education in physics at the undergraduate, graduate as well as post-graduate levels, a center whose works could be published in the best journals at home and abroad, a center associated with and respected by many other centers in Poland and other countries - all this usually takes between ten and twenty years.

As an organizer, Professor Szpikowski met all the necessary requirements in less than twenty years by creating in Lublin a

center for the study of theoretical physics, particularly nuclear physics and solid state physics - the latter largely in cooperation with docent M. Pilat.

2) During the period of the reorganization of Polish universities, Professor Szpikowski was in 1970 appointed Head of the newly formed Institute of Physics at UMCS, comprising experimental theoretical as well as other branches of physics. He held this position for eight years. The present shape of the Institute, both in terms of its organization and personnel, was to a large degree determined by his chairmanship.

3) The organizational achievements mentioned above would not have been possible without Professor Szpikowski's own intensive work in the field of the nuclear theory, and especially the application of the group theory method in nuclear physics. In a necessarily cursory way, several directions of his research work could be mentioned.

In his first publication dealing with the nuclear theory (Professor Szpikowski had up to then concentrated on the problem of thermodiffusion), concerned with nucleus  $^{40}\text{K}$ , he proposed to increase significantly one of the matrix elements of the nuclear interaction. His suggestion was independently confirmed by Moszkowski, who introduced "surface delta interaction" into nucleus theory. The form of this interaction determined the proposed increase of this matrix element. Another series of studies carried out in the years 1964-65 in cooperation with B. H. Flowers [8, 9, 11], then a professor at Manchester University, concerned the introduction into nuclear physics of the orthogonal symmetry groups  $SO(5)$  and  $SO(8)$  as the symmetry groups of the pairing force. These symmetries, studied independently at several research centers, have now become the subject of original scientific works, and Szpikowski and Flowers continue to be referred to in publications dealing with this problem. A different quasiparticle symmetry scheme in the isospin formalism was proposed in a work by K. T. Hecht and S. Szpikowski and later developed by Professor Szpikowski's assistant, dr W. A. Kamiński [20], [22]. In this scheme, it is possible, while overlooking the difficulties in determining genealogical factors, to construct complete basis of the nuclear

configurations of neutrons and protons up to  $j < 9/2$ . Similar in their intention, though different in application, are the works Professor Szpikowski wrote with another of his assistants, dr. A. Gózdź, dealing with constructing complete basis of states in the interacting boson model. The numerical code for the application of the basis to the IBM was developed with the help of yet another assistant, dr K. Zajac. Professor Szpikowski continues to be interested in IBM and his version of the model has been expanded by his group in Lublin to include the question of the supersymmetry in the lighter nuclei region. Supersymmetry in this case means applying the same formalism to the system of bosons and odd fermions. This problem is currently being studied by the group of theoretical physicists headed by Professor Szpikowski and the first reports have already been published

Professor Szpikowski has not limited himself to teaching classes only at UMCS. For longer or shorter periods of time, he has lectured and taught seminars and other classes at all other universities and academies in Lublin: Medical Academy, Agricultural Academy, the Catholic University of Lublin and, recently, Lublin Polytechnic.

Lublin physicists, mostly from UMCS, his friends and colleagues from other institutions across the country and also many similar centers abroad who have worked with him dedicate the present volume to Professor Szpikowski as an expression of their recognition of his contribution to the development of the study of physics in Lublin as well as other centers in Poland and elsewhere. The works of Professor Szpikowski's disciples and assistants are in particular a very special way of expressing their authors' gratitude.

Finally, on behalf of my own as well as Professor Szpikowski, I would like to thank all the contributors for submitting their works to the present volume.

Lublin, 19 January, 1987

Mieczysław SUBOTOWICZ  
Editor in Chief

