

## A special Issue for an exemplary Professor: Joaquín Tamariz Mascarúa.\*

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With a festive tone, but with reflective spirit, let me access to a warmer speech since, through this special issue, the *Journal of the Mexican Chemical Society* (*J. Mex. Chem. Soc.*) thanks Prof. Dr. Joaquín Tamariz Mascarúa for his contributions to the development and welfare of the Mexican Chemical Society. From the point of view of our society, I will point out his omnipresence in our congresses. From the audience's side it must be said that no speaker was spared from his sharp and accurate questions, capable of highlighting the speaker's contributions and allowing the work presented to be assessed. The *Journal of the Mexican Chemical Society* (*J. Mex. Chem. Soc.*) and the *Boletín de la Sociedad Química de México* (*Bol. Soc. Quim. Mex.*), edited by Dr. Mariana Ortiz Reynoso, are benefited from their contributions. I invite you to review his papers and enjoy their scholarship, to value the concepts presented there, and the diversity of scientific problems he addresses. Reading his papers is always stimulating for students and researchers.

Prof. Tamariz has given us his time by participating in countless number of committees to evaluate works, to designate awards winners, and decide on aspects of our society's daily lives. He also was awarded with the Andrés Manuel de Río Prize in 2007 for his Scientific Research, the highest distinction we grant as an association.

Prof. Joaquín was editor-in-chief of the *J. Mex. Chem. Soc.*, just at the time when the *Revista de la Sociedad Química de México* became an indexed Journal and become part of the complex world of periodic evaluation.

Prof. Tamariz decided to address *the problem of the synthesis of new or naturally occurring compounds with relevant properties*. Organic

synthesis is a fascinating field, because through this, the predictive capability of the concepts of Chemistry is manifested, in contrast to considering it, in terms of their explanatory possibilities.



**Photograph. 1.** Photograph of Prof. Dr. Joaquín Tamariz.

To perform serious research in Mexico is a great due to the inequity in terms of the provision of analytical infrastructure and founding. Joining the Escuela Nacional de Ciencias Biológicas (IPN) as an independent researcher could seem like suicide; but instead, today, Joaquín leaves behind one of the best analytical infrastructures in the country and a solid Organic Chemistry Department.

The first projects in which he participated announced his destiny: Synthetic study to obtain 4'-benzyloxy-6-hydroxy-5,7,3'-trimethoxy-flavone in 1975 and Convergent synthesis of substituted furans in 1977, carried out under the supervision of whom was his professor, colleague and friend, Dr. Gustavo García de la Mora.

Prof. Tamariz is immediately identified with the reaction described for the first time by Otto Diels and Kurt Alder in 1928 with which they won the Nobel Prize in Chemistry in 1950. We owe Joaquín the incorporation of the use of computational methods to explain the origin of the selectivity of this reaction. He ingeniously employed transmission electron and photoelectron spectroscopy to understand the relationship between the energies of the frontier orbitals of dienes, and dienophiles, and their selectivity. He also was interested in the reagents used in this reaction to carry out multiple synthetic transformations and addressed the difficult problem of the reactivity of captodative olefins. Thus, he described conditions in which the selectivity of the transformations increased significantly.

He has also successfully addressed inverse electronic demand reactions and established the effect of commonly used catalytic compounds in this transformation. Joaquín not only used captodative olefins to study cycloaddition reactions, but also, they have allowed him to address the fascinating 1,3-dipolar cycloadditions. Of course, the topic involves extraordinary challenges. To make it more interesting, Dr. Tamariz decided to use nitrones as a dipole, which lead to unsuspected difficulties. Here, the theoretical rationalization required the use of the concepts emanating from the theory of density functionals to predict the selectivity of the reactions.

With his research group, Dr. Tamariz has developed the synthesis of fundamental compounds such as basic derivatives of indol's and carbazols. One of Prof. Tamariz's interesting contributions is the synthesis and study of  $\alpha$ -asarone's properties.

Aware of the general national problems, Dr. Joaquín Tamariz has dedicated efforts to control the beetle plague (of the genus *Dendroctonus*) that has had a devastating impact on pine populations in the world's forests, but especially in Mexico. Thus, he has developed the synthesis of some derivatives that have an activity comparable to that of natural pheromones involved in the biochemical processes of communication and reproduction of insects.

The compounds obtained for the study of basic phenomena led him to the preparation of several complex compounds, with fascinating properties. It required the development of new synthetic schemes supported by new strategies, as he showed us in his conference during the scientific congress in 2023:

*Synthetic design of aza-heterocycles as building blocks.*

Prof. Joaquín Tamariz taught us to publish only when you have something relevant to say, or when fully demonstrated results are rigorously interpreted. He has had careful review when a document falls into his hands. He has known how to resist and assume the consequences of opposing the trend, which has greatly degraded world science with more than 10,000 research papers retracted in 2023 (Van Noorden, R. *Nature*, **2023**, 624, 479-481, DOI: <https://doi.org/10.1038/d41586-023-03974-8>) product of publishing for the sake of publishing, seeking easy citations, or participating in meaningless collaborations accumulating repetitive works and graduating students only for statistical purposes.

Originally from Mexico City, Prof. Dr. Joaquín Tamariz Mascarúa was until a few months ago, Professor at the Escuela Nacional de Ciencias Biológicas (ENCB, IPN). He studied Chemistry and Master's in Organic Chemistry at the Faculty of Chemistry at UNAM he completed doctorate studies in Organic Chemistry at the University of Lausanne (Switzerland) (1983) and his postdoctoral stay with Professor Louis S. Hegedus at Colorado State University (1989-1990). He was visiting Professor at West Virginia University (1997-1998). He has supervised 25 bachelor's theses, 47 master's and 32 doctoral theses, starting at a time when no one was interested in postgraduate studies. He has published 170 papers in indexed journals and has been a member since 1984 of the SNI institution where he has the category of Emeritus. He has been a member of the Mexican Academy of Sciences (since 1989). He has been awarded with the Research Diploma (IPN, 2001), the Andrés Manuel del Río 2007 National Chemistry Prize in Research (SQM, 2007), the Research Prize awarded by the Instituto Politécnico Nacional on three occasions, in 1991, 1993 and 2007, and the Lázaro Cárdenas Prize (IPN, 2008).

He has been a driving force in the postgraduate studies at his Institution and at all the others. I am sure that he has reviewed with rigor and success hundreds of theses of all levels, reports and accompanied many students to obtain degrees and titles through exams, reports, and other university activities.

Joaquín has recently retired. We will miss him because he was always involved in transcendent

scientific discussion. The pen and the brush have earned it for us, and that enormous creative capacity will be expressed in other fields, with the usual rigor and affection that he puts into his contributions.

*The Journal of the Mexican Chemical Society (J. Mex. Chem. Soc.)*, one of his projects, has achieved the success of reaching the Journal Impact Factor of 1.5 (JCR), entering the third quartile in the metrics for evaluating the performance of scientific journals. So, in a festive spirit, we thank our current editor, Prof. Dr. Alberto Vela Amieva, and to the editorial assistants: MVZ. Adriana Vázquez Aguirre and Alejandro Nava Sierra, the members of the editorial

board, the referees evaluating the proposals, and their authors, the talent and efforts invested. A successful great collective effort.

**Mexico City, January 2024.**

***Guest editor***

**Dr. Gabriel Cuevas**

\*For additional content, see: Cuevas, G. Semblanza de Joaquín Tamariz. *Bol. Soc. Quim. Mex.* **2007**, 3, 217.