

PRESS RELEASE

The Sener Foundation presents the award for the Best Doctoral Thesis in Engineering 2022 to a PhD from Carlos III University of Madrid for his work on measurements from satellite navigation systems

Madrid, September 30, 2024. The [Sener Foundation](#) has presented the Sener Foundation Award for the Best Doctoral Thesis in Engineering for works submitted in 2022. In this edition, the award-winning author was [Daniel Arias Medina](#), a PhD from the [Carlos III University of Madrid](#), for his work entitled *Robust GNSS Carrier Phase-based Position and Attitude Estimation: Theory and Applications*. The thesis was directed by Jesús García Herrero, Jordi Vilà-Valls and Ralf Ziebold.

The prize is worth 12,000 euros for the author of the thesis and a further 3,000 euros to be divided among the thesis supervisors.

The jury had a difficult task in choosing the winning thesis, given the high quality of the works presented. In particular, it described the winner as *“having a remarkable analytical and mathematical depth, being well organized, relevant and technically complete; the objectives are well defined and the text is clear. In short, this is a great work that represents a clear advancement of our knowledge.”*

For its part, the Board of Trustees of the Sener Foundation noted that *“it is an honor for the Sener Foundation to receive in each edition of these awards an increasing number of doctoral theses, and to continue to encourage in this way young people to contribute to society through research in engineering.”*

The author of the thesis recognized *“the work of the Sener Foundation for its efforts to acknowledge the effort and merit of young researchers.”* He also thanked *“his thesis directors, as well as his family and his partner, for their support.”* For their part, the directors of the work pointed out that *“the doctoral thesis combines theoretical and applied work with contributions in different fields such as the theory of estimation, the fusion of sensor data and robust signal processing.”* The work, they point out, *“proposes limits for estimation errors and new algorithms applied to today’s challenges involving multi-sensor navigation systems, exhibits a rigorous approach to formalization, and is directly related to problems of relevance to the industry and the academic community in this area.”*

The results of the work *Robust GNSS Carrier Phase-based Position and Attitude Estimation: Theory and Applications* fall within the scope of Aerospace Engineering and are related to the use of Global Navigation Satellite System (GNSS) measurements to provide precise navigational estimates for vehicles that cross areas where signal propagation conditions are particularly difficult. In addition to providing location data for applications related to Intelligent Transportation Systems (ITS), there is an increasing reliance on GNSS for timing purposes, which are crucial for the distribution of the electrical grid, finance, and emergency response.

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Through its Best Engineering Doctoral Thesis Award, the Sener Foundation aims to stimulate research at the highest level in the areas of science and technology in which the [Sener](#) group is active, namely, in the aerospace and defense, energy, mobility, advanced facilities for data centers, digital and marine sectors.

The Sener Foundation is now evaluating the theses presented to the Sener Foundation Award for the Best Doctoral Thesis for works presented in 2023 and expects to announce the winner of the 2023 edition in December 2024.

About the Sener Foundation

The SENER foundation was created in May 2002 by [Sener](#) and the Sendagorta family to promote humanitarian initiatives and activities. Over its years of activity, the Sener Foundation has been working in social services at the community level by developing social responsibility in professional activities, training people, and promoting research at the highest level.

The activities carried out by the Sener Foundation include encouraging scientific research at the highest level by presenting prizes, such as the Award for Best Doctoral Thesis in Engineering, sponsoring the Air and Space Force Award for university aerospace research, and supporting R&D projects in technology centers and universities. Similarly, the Sener Foundation promotes corporate volunteering among Sener staff and encourages young people to pursue careers in science through "A Challenge for Science."

About Sener

Sener is a private engineering and technology group founded in 1956 that seeks to transform the world by challenging the limits of technology, with the mission of helping its customers with innovative and effective solutions through its distinctive values: innovation, excellence, commitment, passion and teamwork. Sener has 4,000 professionals on five continents. Sener works in the aerospace and defense, energy, mobility, advanced facilities for data centers, digital and marine sectors, and promotes, through industrial shareholdings, companies that work in renewable energies.

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