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Professor Eder João Lenardão

A tribute

This special issue of Arkivoc is dedicated to Prof. Eder J. Lenardão in honor of his scientific contribution to organic chemistry and green chemistry

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Prof. Eder J. Lenardão was born in 1968 in Sabáudia-PR, Brazil. He received his BS from the State University of Londrina (UEL) in 1991, and MSc from the Federal University of Santa Maria (UFSM), under the supervision of Prof. Claudio C. Silveira. In 1997, he earned a PhD in organic chemistry at the University of São Paulo (USP), under the guidance of Prof. Miguel J. Dabdoub. In 2003, he had a visiting research position at UFSM with Prof. Antonio L. Braga's group. In 1997, he obtained a position at the Federal University of Pelotas (UFPel) as general and organic chemistry professor. In 2015-2016, he spent a year as a visiting professor at the University of Perugia (Italy), joining Prof. Claudio Santi's group.

Eder João Lenardão's curriculum stands out for his solid academic background and contributions to the field of Chemistry, with a focus on organochalcogens and green chemistry. At present, he is a full professor at UFPel, teaching general chemistry, green chemistry, and projects in organic synthesis in undergraduate, and organic synthesis in postgraduate chemistry courses. It is important to mention Prof. Lenardão's satisfaction in being in front of a classroom, sharing knowledge and ideas with eager minds. He guides them through the fascinating maze of chemistry, providing concepts of general and organic chemistry and empowering students to think critically and to approach challenges of sustainable chemistry. For Prof. Lenardão, the classroom is more than a place for lectures, it is a space for curiosity, collaboration, and creativity.

Regarding his research, Prof. Lenardão works with the synthesis of organochalcogen compounds, developing sustainable methodologies based on the twelve principles of green chemistry, for instance, using alternative energy sources, safer and greener starting materials and catalysts. However, his career is marked by different partnerships and the synthesis of several classes of compounds, especially nitrogen heterocycles. He has an extensive record of scientific publications, with over 240 articles published in prestigious journals, nine chapters and three edited books. This impressive body of work is a testament to his academic prowess and dedication to advancing the field of chemistry, and it commands respect and admiration from his peers.

Prof. Lenardão was one of the creators and the first coordinator of the PhD in Chemistry at UFPel. He is a Fellow of the Royal Society of Chemistry, a member of the Advisory Board of the SeS Redox and Catalysis, of the International Conference on the Chemistry of Selenium and Tellurium (ICCST) and, more recently, Honorary Member of the Sociedad Argentina de Investigatión en Química Orgânica (SAIQO). In Brazil, he's a member of the Brazilian Chemical Society, as well as national committees, as the Chemistry Advisory Board of FAPERGS and CNPq.

Lenardão's career is remarkable by the innovative projects in sustainable chemistry and the synthesis and reactivity of organochalcogen compounds. Additionally, he has concluded several academic advisories at UFPel, twenty-one master's degree students, ten PhD, eight post-docs and fifty undergraduate students. He is also active in international collaborations, contributing to the advancement of chemistry on a global scale, especially providing invited lectures and conference presentations in distinct countries.

Short CV

Full Professor at Universidade Federal de Pelotas – UFPel – RS/Brazil
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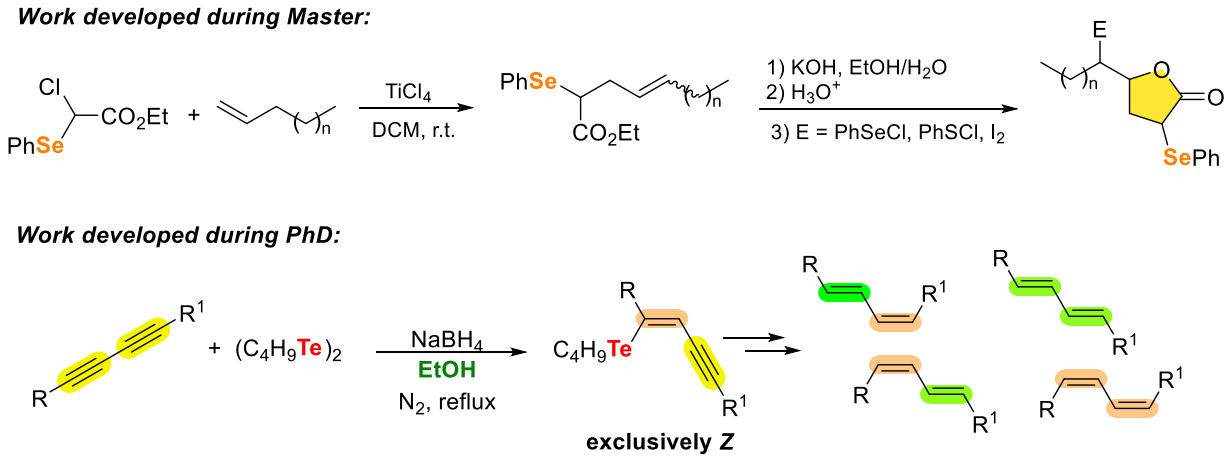
Publications: 242 publications (20 patent applications; 20 review articles) and over 10000 citations and *H*-index 52 (Google Scholar) or *H*-index 44 (Web of Science).

At the beginning of his academic journey, Professor Lenardão earned his BS degree under the supervision of Prof. C. C. Silveira, working on the reactivity of selenium-stabilized carbocations. These studies were deepened during his master's period, in the synthesis of seleno-functionalized butyrolactones.[1] In his PhD, Lenardão worked under the supervision of Prof. M. J. Dabdoub on the stereochemical control in the synthesis of conjugated butadienes, through the hydrotelluration-detelluration of 1,3-butadiynes.[2] During this time, he gained a deep understanding of the synthesis and reactivity of organotellurium compounds, mainly through the challenges of controlling the functionalization of conjugated diynes (Scheme 1).



Scheme 1. Se-stabilized carbocation and stereochemical control in the derivatization of 1,3-butadiynes.

In 1997, E. J. Lenardão began his career as adjunct professor of general and analytical chemistry at the Federal University of Pelotas, Brazil (UFPel). After three years trying to start its research activities in the synthesis of organotellurium compounds, in 2001 he decided to try his luck in the interior of the state of São Paulo, at the same institution where he did his doctorate (USP, Ribeirão Preto). There, he had his first contact with the new philosophy of green chemistry.[3] After a little over a year, he returned to Pelotas and began to gradually apply the principles of green chemistry to the synthesis of organochalcogen compounds. Prof. Lenardão helped to create the graduate program in chemistry of UFPel, where he served as coordinator for 4.5 years. He also has coordinated institutional projects that enabled the acquisition of medium and large sized equipment for chemistry research.

In 2003, in a collaboration with G. Perin and R. G. Jacob, Lenardão published two works in Tetrahedron Letters that marked the beginning of the inclusion of green chemistry principles in his research activities. The two articles explored the use of renewable raw materials and alternative energy sources to prepare fine chemicals, through a high atom-economic approach.[4-5]

During his sabbatical, Lenardão worked as a visiting researcher at Federal University of Santa Maria (Brazil), where he joined for one year Prof. Antonio L. Braga's group. In that period, he started studies on the synthesis and chemical properties of new selenium and tellurium ionic liquids.[6] These studies were later extended to the application of selenonium salts as catalyst in several reactions.[7-8]

When Lenardão resumed his position at UFPel in 2004, he realized that chemistry courses were unaware of the new philosophy of green chemistry. In the same year, he established the first green chemistry course for undergraduate students at UFPel, which was also the first green chemistry course in Brazil.[9] His pioneering role in promoting green chemistry principles has transformed the way organic synthesis is conducted in his institution and inspired a new generation of chemists to embrace sustainability in their work.

Over the last 20 years, they have applied the principles of green chemistry to the synthesis of organochalcogen compounds and other molecules of interest to the chemical, agrochemical and pharmaceutical industries. Among the different methodologies developed are the use of alternative solvents, alternative energy sources such as microwaves, ultrasound and light, the use of biomass as a source of raw material, the use of heterogeneous catalysis and reactions with high atomic efficiency (Figure 1).[10-13]

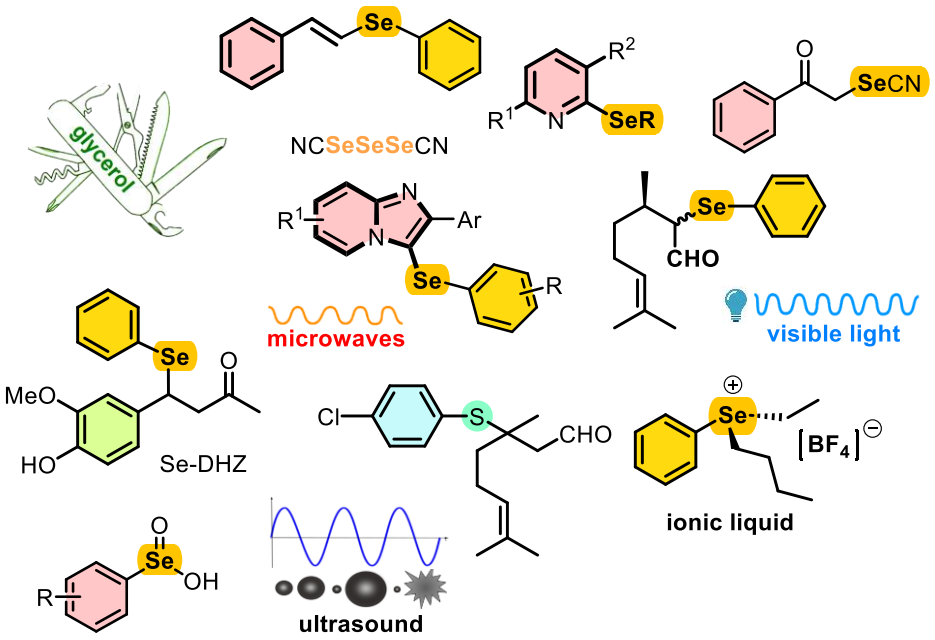


Figure 1. Greening the synthesis of organochalcogen compounds.

Throughout the text, it became clear that Prof. Lenardão has the ability to foster partnerships in research. Lenardão is an expert in promoting collaborations, enabling researchers to combine their strengths, share knowledge, and solve complex problems more effectively.

Lenardão's career is a continuous discovery, innovation, and mentorship journey. Beyond laboratory classes and academic publications, his role is defined by an unwavering passion for science and a commitment to advancing knowledge. Lenardão is not only an expert in organic synthesis and green chemistry but also a supportive and kind person. He can be very proud of being an inspiration to many chemists.

With consideration and great admiration
Prof. Márcio S. Silva
Federal University of ABC
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