Computational Modeling Searches for Efficient Energy Sources

Laura Gagliardi
Distinguished Mcknight University Professor, Chemistry

CURRENT RESEARCH

Modeling chemical processes for renewable energies

Scientists are actively searching for sustainable and renewable sources of energy to support future generations. However, searching for energy sources can be costly and often ineffective. Therefore, researchers are finding new ways to develop energy-relevant processes. Dr. Laura Gagliardi is a theoretical and computational chemist who employs computational methods based on the fundamental laws of quantum mechanics to understand phenomena related to energy-relevant processes. Her research is playing a part in reducing greenhouse gases, understanding fundamental chemical processes, producing renewable energy sources, and finding ways to dispose of nuclear fuel. Dr. Gagliardi's computational models are an affordable and efficient way to investigate new materials, catalysts, and chemical processes that other researchers may be able to produce. Therefore, Dr. Gagliardi's research plays an incredible role in predicting solutions for a future for generations to come in which energy-relevant processes are improved and more sustainable options are available.

Dr. Gagliardi's research has a large impact on society. However, what makes her research especially unique is her use of computational modeling which allows her to address risky chemical problems because she does not have to deal with safety or pollution issues. Therefore, she and her team can do a lot of screening for the people who work in the laboratory and advise them on which experiments are worth setting up in the laboratory. This state-of-the-art computational predictive tool saves time and money for experimenters and provides them with new directions on how to address very exciting chemical problems.

Current research includes:

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AFFILIATION

University of Minnesota

EDUCATION

- Ph.D., in Chemistry, 1997 , University of Bologna, Italy

AWARDS

- Distinguished Mcknight University Professorship, University of Minnesota, 2014
- Swiss National Science Foundation, 2010
- Annual Award of the International Academy of Quantum Molecular Science to scientists under 40, 2004
- Award 'Toso-Montanari' University of Bologna for the student with the highest-mark graduation in chemistry, 1993

RESEARCH AREAS

Technology, Chemistry, Computational Sciences / Mathematics, IOT, Devices, Data

FUNDING REQUEST

Your contributions will support the continued research of Dr. Laura Gagliardi as she employs computational modeling to explore energy-relevant processes. Donations will support the necessary $1M per year required for personnel. Therefore, in choosing to fund Dr. Gagliardi's research you will play a part in finding solutions for future generation and educating young scientists!