

**Ben-Gurion University of the Negev  
Blaustein Institutes for Desert Research**

The Swiss Institute for Dryland Environmental and Energy Research  
Alexandre Yersin Department of Solar Energy and Environmental Physics

## **Genetic Code Expansion of Redox Enzymes and Proteins in Different Microorganisms**

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### **Abstract**

In recent years, our laboratory has successfully expanded the genetic code of several microorganisms, *Escherichia coli*, *Cyanobacteria*, *Pseudomonas aeruginosa* and *Serratia*. Genetic code expansion is the experimental attempt to modify the genetic code of an organism so it allows the incorporation of unnatural amino acids into proteins. The importance of being able to genetically expand the code of different organisms in the context of our research is that by achieving it, we will be able to engineer and modify proteins of these organisms at will using new building blocks. In my talk I will exemplify how we have engineered and incorporated unnatural amino acids into proteins in these organisms in order to utilize these proteins for improved electron transfer through the site-specific wiring of these proteins and whole organisms, for quorum sensing studies, binding of metal ions, for labeling and many more other applications. I will describe the technology and the different uses we have made in detail and demonstrate its robustness.

**Date & Location:**

**Tuesday, Feb. 26, 2019, 11:00**

**Lecture room, Physics Building (ground floor)**

