

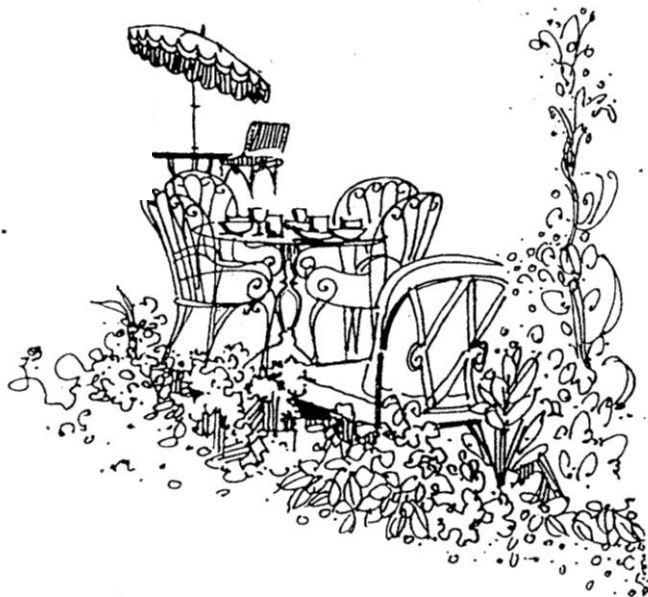
Chez Pierre

Presents ...

Monday, September 17, 2012

12:00pm

MIT Room 4-331



Alan Aspuru-Guzik
Harvard University

“Rethinking spectroscopy: Molecules as quantum processors”

In this talk, I will describe our efforts to characterize the energy transfer dynamics in complex molecular environments. For this purpose, we had to reinterpret ultrafast molecular spectroscopy in the light of quantum information. In particular, I will describe the first proposal and first experimental realization of quantum process tomography in a chemical system. In collaboration with the group of Keith Nelson (MIT), we observed coherent oscillations between two walls of a molecular J-aggregate lasting ~200 fs. In addition, I will describe the implications of these results for other areas such as organic electronics and the understanding of the fundamental mechanism of light-harvesting in Green-Sulfur bacteria.