

**Department of Structural Engineering  
University of California, San Diego  
SE 290 Seminar**



**Professor Oscar Vazquez-Mena**  
Department of NanoEngineering  
University of California, San Diego

**"Optoelectronics and Civil Engineering at the Nanoscale with Graphene"**

Wednesday, May 31, 2017

1:00 pm - 1:50 pm, Pepper Canyon Hall, Room 122

<http://structures.ucsd.edu/node/2126>

**Abstract**

Graphene is the fastest, strongest, and thinnest natural material ever found and its properties have opened a real avalanche in potential applications. The electrons in graphene can move up to 100 times faster than in silicon, its tensile strength is 300 times higher than steel, and its thickness almost unbeatable: 1 atom thick and about 50 thinner than the cell membrane or a DNA chain. Furthermore, graphene is chemically stable in air and aqueous conditions. In this talk we will discuss applications of graphene in optoelectronics, biological applications, as well as first experiments building structures at the nanoscale using graphene as structural component. Nature has done its part giving us this amazing material, now we have to do our part, developing the technology to handle this ultrathin material for real applications.

## **Biography**

Professor Oscar Vazquez-Mena joined the NanoEngineering faculty at UCSD in January 2016. Previously he obtained his Ph.D. in 2010 from the Swiss Federal Institute of Technology of Lausanne (EPFL) in Switzerland. He did postdoctoral research stages at the University of California, Berkeley in the Department of Physics from 2011 to 2014, and at the Institute of Photonic Sciences in Barcelona in 2015. He obtained a Master's degree in Nanoscale Science and Molecular Biophysics from Chalmers University of Technology in Sweden. His research covers the areas of nanofabrication and nanomaterials for optoelectronic, biosensing and energy harvesting.

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*Sponsored by Professor Kenneth Loh  
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