

CU Physics Department Colloquium

Monday, March 1, 2010 4:10 PM 428 Pupin Hall



Konstantin K. Likharev, Stony Brook University

"Nanoelectronics: Prospects and Challenges"

I will review recent work on nanoelectronics, with a heavy emphasis on devices, circuits and architectures for possible reconfigurable hybrid semiconductor/nanoelectronic integrated circuits. Such a circuit allows its semiconductor-transistor subsystem to communicate with each and every nanodevice a nanowire crossbar add-on. Detailed studies have shown that the hybrid circuits may extend the exponential ("Moore's-Law) progress of digital electronics for 10 to 15 years. They may also enable mixed-signal, adaptive neuromorphic networks ("CrossNets") which may eventually become the first hardware basis for challenging the mammal cerebral cortex in both density and speed, at manageable power. In conclusion I will formulate the most urgent problems of the field, whose solution could be contributed by physicists.

Hosted by Boris Altshuler

Meet the speaker will be held at 5:30 PM in 1124 Pupin Hall

