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## **Clean unit system platform in “atom-bit-energy/environment” space for high-efficiency solar cells and kinetosomnogram (KSG) applications**

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New devices and systems in materials science (atoms), information technology (bits), energy, renewable energy, and environment engineering having been of increasing importance, it would be convenient for us to investigate those new devices and systems in the four-dimensional space of atom-bit-energy/environment (ABE2) space. We have been studying quantum-cross devices in atom-bit (AB)-plane, multi-striped orthogonal photon-photocarryer-propagation solar cell (MOP<sup>3</sup>SC) in bit-energy (BE)-plane, and clean unit system platform (CUSP) in atom-environment (AE)-plane. The CUSP, being itself a key player in AE plane of the ABE2 space as a clean versatile environment of ISO class -1 to 5 having small footprint, low power-consumption and high cost-performance can serve as the next generation production system and future cross-disciplinary platforms including the one for kinetosomnogram. Multiply-connected CUSP system will outperform conventional clean room only for nanotechnologies or bio-technologies but also for the next-generation environment-friendly healthcare platform. Since extremely high cost-performance in industrial and social activities means “cost/performance ~ 0”, which could be a counterpart of “mass ~ 0” in physics, CUSP would be able to serve as a “Nambu-Goldstone boson” to make a social phase transition for our better world in terms of maintaining high QOL and postponing the time when elder people might get into medical cares. The CUSP in AE plane, outperforming the conventional super clean room (“main frame”), would be the clean space for all of us in near future.

### **Biography**

Akira Ishibashi completed his PhD in 1990 from Dept. of Phys., the University of Tokyo. He joined Sony Corp. Res. Ctr., 1983 and achieved the world first room-temperature CW operation of blue laser diode based on ZnMgSSe II-VI materials in 1993. He was a visiting faculty of Loomis Lab., Dept. Phys., Univ. of Illinois at Urbana-Champaign, 1990-1991, and a visiting Professor at Inst. for Interdisciplinary Research, Tohoku Univ. in 1998. Since 2003, he has been a Professor heading Nanostructure Physics Lab., RIES, Hokkaido Univ.

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