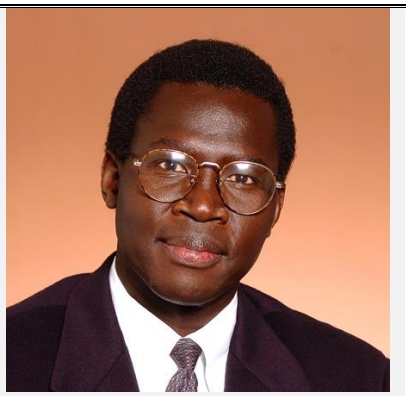
The 19th U.S.–Korea Forum on Nanotechnology



Professor Elias Towe

Carnegie Mellon University, USA

Elias Towe is the Albert and Ethel Grobstein Professor, and University Professor in the Department of Electrical and Computer Engineering at Carnegie Mellon. Towe's group pursues research in optical and quantum phenomena in semiconducting materials for applications in novel photonic devices and systems that enable a new generation of information processing systems for communication, computing, and sensing. Current device- and subsystem-level research includes work on quantum sensors, single-photon light sources, and quantum entropy generators for secure communication. Prof. Towe is currently Director of the National Science Foundation Industry-University Center on Quantum Computing and Information Technologies (QCiT) at Carnegie Mellon. The research at the Center is in the broad areas of quantum computing and quantum networks. In computing, the team is focusing on the computing stack: from the bottom qubit layer, through the gate control to the compiler/transpiler layer, to the top algorithmic layer, including software for use-case applications in select areas. In networks, the team works on secure quantum networks for distributed computing and communication, including networked sensors.

Towe received the S.B., S.M., and Ph.D. degrees from the Department of Electrical Engineering and Computer Science at the Massachusetts Institute of Technology in Cambridge, MA, where he was a Vinton Hayes Fellow. He is a Fellow of the IEEE, Optica (formerly OSA), American Physical Society, and the American Association for Advancement of Science. He is a recipient of several academic and professional awards that include the John Bardeen Award. Prof. Towe is a Member of the US National Academy of Engineering.