

Professor Shenggang Liu

Abstract:

Terahertz Science and Technology (THz) involves plenty of sciences and has many important applications in varieties of areas, Physics, Chemistry, Biology, Material Science, Electronics, etc. Therefore, THz has been paid extremely attention in all over the world. However, during past more than 30 years, the Gap of THz could not recovered.

After many years effort, scientists got to know that it is very hard to cover the THz band (0.1-10 THz, 1 THz =1000 GHz) only use the Electronics or only use the Photonics. A novel mechanism based on the combination of electronics and photonics has been presented. We show that by means of the Electron Beam exciting the Surface Plasmon Polaritons of some metals, like Silver (Ag) or Gold (Au), the coherent and tunable radiation from Light to UV can be obtained, and by using the Graphene sheet, the coherent and tunable coherent radiation covering the whole THz frequency band can be achieved. The newly expanding ideas will be given in the conclusion.

Biography:

Shenggang Liu received his Ph. D. degree in physical electronics in 1958, he was elected the Academician of Chinese Academy of Sciences (CAS) in 1980 and he is now the member of Presidium of CAS. He is IEEE Fellow and member of Electromagnetic Academy, MIT, USA. He is the member of IOC of the IRMMW-THz Conference and the member of the K.J. Button Prize Committee. He was the Conference Chair of the International Conference on IRMMW in 2000, and the Honorary Conference Chair of the International Conference on IRMMW-THz in 2006. He is the Chair of IOC of the Shenzhen International Conference on Advanced Science and Technology.

He was awarded the K. J. Button prize in 2003, the Chinese National Prize of Nature Science in 1985 and in 1999. He was awarded The Tan Kah Kee Prize (the highest Prize of Chinese Academy of Sciences) in 2001. He was invited to serve as the nominator for Nobel Prize in Physics by the Nobel Committee for Physics of the Swedish Royal Academy of Sciences in the year of 1999 and 2000.

He served as the president of University of Electronic Science and Technology of China (1986 to 2001).