Pairing of lithium atoms under the high pressure condition has been theoretically predicted by Neaton and Ashcroft at 1999, and the paired structure has been experimentally observed by Hanfland et. al. using diamond anvil cell (DAC) experiments at ~50 GPa. Afterwards, this kind of paired structures under the high pressure becomes a well-known phenomenon for the alkali and alkaline earth metals. The newly developed computational simulation tool, electron force field (eFF) can greatly describe the metallic bond in FCC bulk system based on the interstitial electron model. Since the eFF method is much less expensive computational method compared to conventional quantum mechanical simulation methods such as DFT, this method provides us numerous chances to study the dynamics of highly excited systems. Here, we have succeeded to describe the energetics, density and pressure of the normal FCC lithium structure as well as the high pressure lithium structure (Pearson symbol cI16). Based on the current success, we are going to study the shock-hugonions and the dependency of electrical conductivity on the pressure using eFF simulations.