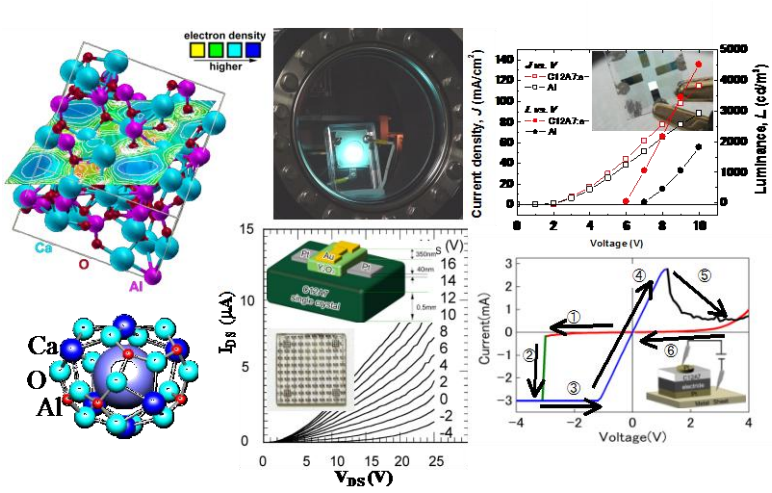
Development of practical electronic devices using novel inorganic materials

One prominent example is amorphous oxide semiconductor, which is superior to amorphous silicon and expected for next-generation FPDs and flexible electronic devices.

Search for wide bandgap p-type materials has developed room-temperature operation of blue excitonic LED and oxide p-channel TFTs.

Air-stable inorganic electride C12A7:e^- is a new exotic material that has a very low work function and high electron activity, which can be used for plasma fluorescent, electron emitter, ReRAM etc.

Prototype displays using amorphous oxide TFTs



Crystal / electronic structures and device applications of C12A7:e^-