An interesting direction in ultracold atom research is the study of optical lattice systems where a periodic potential is applied to the system through the AC Stark shifts of external lasers. These systems mimic solid state systems closely and provide a controlled environment through which many quantum phenomena can be studied. We consider optical lattice systems where an effective magnetic field is created by rotating the external lattice. Experimentally available rotation frequencies correspond to effective magnetic fields of the order of tens of thousands of tesla, thus make it possible to observe high magnetic field effects which have not been observed in solid state systems. We will review our recent results about Mott Insulator-Superfluid transition, topological Hofstadter insulator, p-band dispersion, BCS pairing and Fractional Quantum Hall states in this system.