Microwave is radiated into the plasma and electrons can be heated resonantly when microwave frequency equals the cyclotron frequency, they have high energy level in this region at the same time.

Ions in the plasma are further ionized up to higher charge states through successive collisions with electrons.

ECR plasma ion density $>10^{14}$ cm$^{-3}$

http://www.epon.co.kr/

IRIS (Ion Source for Radioactive Isotopes)

http://ecrgroup.lbl.gov/