Consider an arbitrary automorphism of an Enriques surface with its lift to the covering $K3$ surface. We prove a bound of the order of the lift acting on the anti-invariant cohomology sublattice of the Enriques involution. We use it to obtain some mod 2 constraint on the original automorphism. As an application, we give a necessary condition for Salem numbers to be dynamical degrees on Enriques surfaces and obtain a new lower bound on the minimal value (joint work with Y. Matsumoto (Nagoya) and H. Ohashi (Tokyo)).