Let \( N_a \) be the number of solutions to the equation \( x^{2k+1} + x + a = 0 \) in \( \mathbb{F}_{2^n} \) where \( \gcd(k, n) = 1 \). In 2004, by Bluher it was known that possible values of \( N_a \) are only 0, 1 and 3. In 2008, Helleseth and Kholosha have got criteria for \( N_a = 1 \) and an explicit expression of the unique solution when \( \gcd(k, n) = 1 \). In 2014, Bracken, Tan and Tan presented a criterion for \( N_a = 0 \) when \( n \) is even and \( \gcd(k, n) = 1 \). In this talk, we review some equations over \( \mathbb{F}_{2^n} \) and present the solution of the equation \( x^{2k+1} + x + a = 0 \) in \( \mathbb{F}_{2^n} \) with \( \gcd(n, k) = 1 \). We explicitly calculate all possible zeros in \( \mathbb{F}_{2^n} \) of \( P_a(x) \). New criterion for which \( a, N_a \) is equal to 0, 1 or 3 is a by-product of our result.