

Abstract

Let F_{2^m} be a finite field of 2^m elements, and

$R = F_{2^m}[u]/\langle u^k \rangle = F_{2^m} + uF_{2^m} + \cdots + u^{k-1}F_{2^m}$ ($u^k = 0$) where k is an integer

satisfying $k \geq 2$. For any odd positive integer n , an explicit representation for every self-dual cyclic code over R of length $2n$ and a mass formula to count the number of these codes are given first.