

### Abstract

We show that a necessary condition for  $f(x) = \sum_{i=1}^{n/2-1} c_i Tr(x^{1+2^i}) + c_{n/2} Tr_1^{n/2}(x^{1+2^{n/2}})$ ,  $c_i \in \mathbb{F}_2$  being bent is  $c_{n/2} = 1$ . We then present several constructions and enumerations for such bent functions. Using an iterative approach, we give a method to construct bent functions with maximum degree  $\frac{n}{2}$  by using quadratic bent functions constructed in this paper.