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In 1992, K. Kim and F. Roush showed Diophantine undecidability of any rational function field of odd characteristic over fields of constants algebraic over a finite field and not containing its algebraic closure. In other words, it was shown that over these fields, there is no algorithm to determine whether a polynomial equation in several variables has a solution in the field. In 2000 this result was extended by the author to some algebraic extensions of rational functions fields of odd characteristic, including the ones with a constant field algebraic over a finite field. However, the results covered only the fields where the algebraic closure of a finite field had an extension of degree equal to the characteristic. An analogous result for the even characteristic was proven by K. Eisentraeger in 2003. In this talk we discuss the progress which has been made towards the full generalization of the Kim and Roush result to algebraic extensions, i.e. to any function field of positive characteristic not containing the closure of a finite field. (Received September 19, 2011)