In recent years, we have studied the possibility of using YBCO thin films not only for passive switching, as in resistive fault current limiters, but also as actively switchable devices at high power levels and millisecond time scales. As a trigger, we previously used heat pulses which were launched from the backside of the substrate. This requires relatively high trigger power, however. More recently, we have used RF pulses which are directly applied to the superconducting strip itself. The RF magnetic field was applied by various types of coils at frequencies in the MHz range. The samples were prepared by thermal co-evaporation on sapphire substrates in the form of strips with dimensions 10 mm $\times$ 42 mm. They were submerged in liquid nitrogen and biased by a dc current. Simultaneously with the leading edge of the RF pulse, we observe the onset of a dc voltage drop along the superconductor which continues to increase during some milliseconds until the YBCO film eventually switches into the normal state. We have measured the switching time as a function of bias current, RF field direction, and RF power. The latter is considerably less than the heat pulse power required for our previous trigger method. The optimum field
direction turned out to be perpendicular to the film.

Stichworte: barium compounds; high-temperature superconductors; superconducting switches; superconducting thin films; vacuum deposited coatings; yttrium compounds

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