**ABSTRACT**

 In this paper, by employing the fractional power of operators, semigroup theory, and fixed point strategy we obtain some new criteria ensuring the existence and exponential stability of a class of impulsive neutral stochastic integrodifferential equations driven by a fractional Brownian motion. We establish some new sufficient conditions that ensure the exponential stability of mild solution in the mean square moment by utilizing an impulsive integral inequality. Also, we provide an example to show the efficiency of the obtained theoretical result.