By definition, a PTAS with $0 < \epsilon < 1$ generates a solution within a factor $1 + \epsilon$ of the optimal value. Then we can prove that the rounding in the Bin Packing Problem does not lead to a PTAS by contradiction.

Suppose the rounding yields a result within $(1 + \epsilon) * OPT$ for any instances. Then we construct a Bin Packing instance with $2n$ items, each of which occupies $s_i = 0.5$ space. The optimal solution is to have n bins, each packed with 2 items. Because the rounded value of the items are greater than 0.5, the approximation gives at least $2n$ bins, which is twice the optimal value. $1 + \epsilon \geq 2$ leads to $\epsilon \geq 1$, which contradicts the assumption that $0 < \epsilon < 1$.

(Discussed with Diqiu Zhou)