

# Some Properties of Left $r$ -Clean Bimodules

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Let  $R$  be an associative ring with identity and  $M$  an  $R$ -bimodule. Ring  $R$  is considered clean if each element is the sum of idempotent and unit elements. By generalizing the unit elements to regular elements, the definition of a clean ring has been generalized to an  $r$ -clean ring. Previous researchers have developed a clean ring definition and their generalization to the module structure through its endomorphism ring. This research introduces the generalization of  $r$ -clean rings, called left  $r$ -clean  $R$ -bimodules, defined without their endomorphism rings. Furthermore, we present some of their properties and give the sufficient and necessary conditions for an  $R$ -bimodule to be  $r$ -clean.

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