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A Highly Durable and an Effective SrAl₂O₄:Eu²⁺,Dy³⁺ Mechanoluminescent Paint.**Suman Timilsina¹, Ramesh Bashnet², Seong Hoon Kim³, Kwang Ho Lee², Ji Sik Kim^{1,*}**¹ Kyungpook National University,
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Department of Software Engineering, Kyeongbuk 742-711, Republic of Korea*Corresponding Author: Ji Sik Kim, e-mail jisikkim@knu.ac.kr**Abstract**

We demonstrated that mechanoluminescent (ML) paint embedded with SrAl₂O₄:Eu²⁺,Dy³⁺ can reveal complex cracks evolved in Splitting test of concrete and it was found that fatigue strength of ML paint is good enough to be applied on normal strength concrete. The emission of photons (ML intensity) from ML paint kept reducing with number of repetitive stress cycles and the rate of reduction of ML intensity was proportional to the amount of an applied maximum stress, however, the reduction was not that high enough during the life of ML paint. ML paint also showed good resistance to aging factor like salt water solution both in fatigue strength as well ML intensity.

Keywords: mechanoluminescent (ML) paint, splitting test, crack initiation, durability, interface

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