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Shervin Eslami Harandi, R.K. Singh Raman

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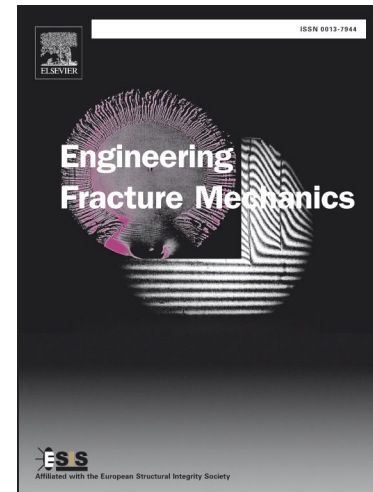
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**Corrosion fatigue of a magnesium alloy under appropriate human physiological conditions for bio-implant applications**

Shervin Eslami Harandi<sup>1</sup> and R.K. Singh Raman<sup>1,2\*</sup>

<sup>1</sup>Department of Mechanical and Aerospace Engineering, Monash University, Melbourne, Victoria, Australia

<sup>2</sup>Department of Chemical Engineering, Monash University, Melbourne, Victoria, Australia

\* Corresponding author: raman.singh@moansh.edu

Full Name: Professor R.K. Singh Raman  
Address: Department of Mechanical & Aerospace Engineering  
Department of Chemical Engineering  
Building 31, Monash University - Clayton Campus (Melbourne)  
VIC 3800, Australia  
Email: raman.singh@moansh.edu  
Tel: +61399053671

**Abstract**

This paper presents investigation of fatigue strength of a common magnesium (Mg) alloy, AZ91D, in air and Hanks' solution under appropriate mechano-chemical conditions (namely, properly simulated loading and frequency, and in the presence of bovine serum albumin (BSA) at 37 °C). Fatigue cracks initiated from inclusions when tested in air and from corrosion pits when tested in Hanks' solutions. However, at constant stress levels lower than fatigue limit in air, the alloy tested in Hanks' solution + BSA indicated longer fatigue strength than the alloy tested in the plain Hanks' solution which was attributed to the influence of adsorbed BSA on corrosion and corrosion fatigue (CF) crack propagation of the alloy.

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