

Influence of green carrier medium and metal dopant on electroresponse

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Conventional electroresponsive fluids made up of non-eco-resorbable materials, including silicone oil or non-degradable metals, can have harmful effects to the environment when discarded. Non-toxic metals are used as dopants to enhance the dielectric constants and eco-friendly oils are adopted as carrier medium to make difference in particle-fluid forces. This study presents an effective way to accelerate commercialization with environmental protection by systematically analyzing the effects of green carrier medium and non-toxic metal doping. The proposed ER fluids exhibit excellent shear stress and outstanding dispersion stability and have commercial potential in terms of environmental protection.

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