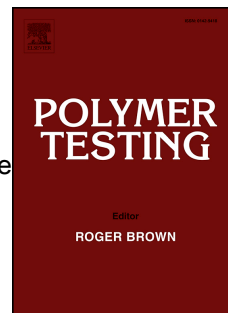


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## Effect of graphene oxide-based nanostructured coatings on the electrical performance of cross-linked polyethylene

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### ABSTRACT

The electrical withstand capabilities of polyethylene films and ad hoc prepared PE sandwich samples containing controlled cavities inside, both coated with organic-inorganic hybrid thin layers also modified with graphene oxide, have been investigated. While films have been subjected to breakdown tests, samples with cavities have been exposed to partial discharge (PD) induced electrical ageing, valuating the different evolution of the damage due to PD activity. Experimental results highlight the positive effect brought by the presence of the hybrid coating and in particular of the coating containing also graphene oxide on the electrical performance of the samples.

Keywords: hybrid coatings; graphene oxide; partial discharge; barrier property; life test

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