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The behaviour of boron carbide (b4c) powder on borax/pmma composite surface

The results of this study indicated that boron carbide (B4C) powder has been cleanly penetrated to the poly(methyl methacrylate) (PMMA) with little observed deformation. B4C powder and PMMA integration was observed at the cracking surface at both od side of PMMA. Boron carbide powder was used to examine crack nucleation, propagation, and coalescence on PMMA. The rise of borax amount in PMMA caused to decrease the detection of the cracking within the composite as a function of borax amount. Two experimental configurations were used to obtain such data and each highlighted the practical difficulties associated with the measurements. This demonstrated the need for well-defined and systematic series of experiments to examine single crack behavior. Further effort is evaluated to provide quantitative interpretation of cracking and to extend the service life of PMMA with the densification.

Keywords: Boron carbide, Poly (methyl methacrylate), Composite, Thermoplastic

Biography

N Baydogan is a Prof. Dr at Istanbul Technical University, Energy Institute, Nuclear Researches Division, Istanbul, Turkey. She studied physics in Istanbul University, Turkey. She received MSc. and PhD. from Istanbul Technical University, Nuclear Energy Institute. Her research is at the interface where ionizing radiation and materials meet: radiation source, nanomaterial, polymer nanocomposites, thin film deposition. She is best known for work on the applications of nuclear techniques.