

Fatigue damage model of woven glass-epoxy fabric composite materials

Indra Narayan Yadav and Kamal Bahadur Thapa

Tribhuvan University, Nepal



Abstract

Based on the Stiffness degradation rule of woven glass fiber composite under fatigue loading, a phenomenological fatigue damage model containing two material parameters in which first is directly proportional to the fatigue life and second is inversely proportional to fatigue loading level is presented in this paper by analysing damage development effects shows that fatigue strain is inversely related to fatigue modulus. Experimental data from Tensile Fatigue Test were employed to verify the model, and the results show that the model can describe the damage evolution of woven glass-epoxy composite laminates under different fatigue loading by verifying the predicted fatigue life of composites. Degradation of Young's Modulus at different loading cycles, damage development corresponding to Normalized life, its accumulation subjected to constant amplitude fatigue loading including its verifications are well discussed.

Biography

Indra Narayan Yadav is PhD Candidate at Tribhuvan University, Institute of Engineering, and Pulchowk campus, Lalitpur, Nepal under the supervision of Dr. Kamal Bahadur Thapa with overall 23 years experiences in teaching, learning and research in concrete and composite structures. Mr. Yadav has a long standing research interest in fatigue damage of brittle materials-concrete and woven glass fabric composite. He has been the Assistant Professor at Tribhuvan University, IOE, and Thapathali Campus, Nepal and also performed as a structural consultant for design, implementation and finalization of more than 60 Governmental and almost 40 private projects related to building, bridge and road sector in Nepal. More than 8 International journal papers and 3 national journal paper has published by Mr. Yadav as a PhD Research Work with the assistant of research grand from CARD Section, Dean office of IOE and eNpE program of NTNU, Norway.



[3rd World Congress on Bio-Polymers and Polymer Chemistry](#) | Rome, Italy | February 24-25, 2020

Citation: Indra Narayan Yadav, Fatigue Damage Model of Woven Glass-Epoxy Fabric Composite Materials, Polymer Chemistry 2020, 3rd World Congress on Bio-Polymers and Polymer Chemistry, Rome, Italy, February 24-25, 2020, 04