The effects of mixing speed on mechanical properties and morphology of epoxy-carbon particles from rice husk composite

H Pratiwi1, F Nugroho2, B Goncalves2

1Department of Mechanical Engineering Education, Faculty of Engineering, Universitas Negeri Yogyakarta, Indonesia

2Department of Mechanical Engineering, Sekolah Tinggi Teknologi Adisutjipto, Indonesia

Email: hennypratiwi@uny.ac.id

**Abstract**. This study aimed to identify the effect of mixing speed on mechanical and morphological of particulate powder from burning the rice husk. The mixing speed variations are 660 rpm, 885 rpm and 1020 rpm. Hand lay-up method was used to manufacture the composites. Tensile strength, tensile modulus, elongation and impact strength were determined based on ASTM standard. Results show that mixing speed improves the mechanical properties of materials. The optimum tensile properties are achieved when particles and matrix were stirred at 1020 rpm. On the other side, 885 rpm mixing speed produced the highest impact strength. The scanning electron micrograph of tensile fracture surface reveals that there are voids which are the cause of the composites failure.