POLITEKNIK MALAYSIA

BORANG INVENTORI PROJEK PELAJAR

PERKARA	MAKLUMAT *INFORMATION*
Program *Program*	DKM
Jabatan *Department*	KEJURUTERAAN MEKANIKAL
Semester/ Tahun *Semester/ Year*	LIMA
Tajuk Projek *Project Title*	EFFECT OF EPOXY'S MIXING RATIO ON IMPACT PROPERTIES OF JUTE COMPOSITE FOR ELBOW PAD APPLICATION
Jenis Projek *Type of Project*	PENYELIDIKAN
Kategori Kluster Penyelidikan *Category/ research Cluster*	TEKNOLOGI DAN KEJURUTERAAN
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Abstrak *Abstract*	This paper was study about the environmentally friendly material that can be replace the previous material in the making of elbow pad. This research has focused on the use of renewable sources that is jute. Jute is a long, soft, shiny vegetable fiber that can be spun into coarse, strong threads.It is a very strong natural fiber with a wide variety of functional. In this study, the jute fabric reinforced with 2 different of epoxy mixing ratio are processed through hand lay out method. Jute fabric are combined with epoxy for a total specimen with thickness of 3mm. This research is performed using the impact test that is izod test (ASTM-256) and Charpy test (ASTM-D6110) to measure the mechanical properties of energy absorption and the toughness of metals. The two different of

	epoxy mixing ratio with 2:1 and 3:1 (epoxy:hardener) was composite with the jute fabric has been tested with the load 4.4kg.It is found that the specimen with ratio 2:1 give the best result is 3.68 joule compare to the specimen with ratio 3:1 has only 3.14 joule in the charpy test. It also shown that specimen with ratio 2:1 has the best result compare with the specimen with the ratio 3:1 in izod test.At the end of this test, it shown that the composite with the epoxy mixing ratio 2:1 has the higher energy absorption than the composite with mixing ratio 3:1.
Keyword *Keyword* (max 5 word)	Laminated jute fiber(jute fabric), epoxy composite, epoxy mixing ratio, impact test, mechanical properties, toughness of metal
Objektif Projek *Project Objectives*	Studying environmentally friendly materials that can replace the previous material in the making of synthetic elbow pad
Skop Projek *Project scope*	i. Making an elbow pad using jute fibers ii. Do the Impact test(IZOD AND CHARPY) iii. Study the epoxy and hardener mixing ratio

IP No		
Dapatan *Finding* (*500 words max*)	The test process has already been done, it is found that the specimen with ratio 2:1 give the best result is 3.68 joule compare to the specimen with ratio 3:1 has only 3.14 joule in the charpy test. It also shown that specimen with ratio 2:1 has the best result compare with the specimen with the ratio 3:1in izod test.This product also practice the green concept element because it is use the eco friendly material to made out of this product that is jute fiber.It has a quick disposal process.This test also show that the energy absorption of jute epoxy composite is almost same with the material of the existing elbow pad.So its is possible to replace the existing material of elbow pad.	
Cadangan untuk kerja-kerja akan datang *Suggestion for future work* (*500words*)	1)ELBOW PAD MODEL The material for making elbow pad model can replace by using the silicone.It will help the elbow pad easy to remove from the model because the silicone is a soft material that can easy to bent. 2)EPOXY MIXING RATIO The epoxy mixing ratio and change with other ratio like 10:1, 8:2 to get more result of their energy absorption 3)TESTING Add more type of testing like hardness test, tensile test to get more result or mechanical properties of the jute epoxy composite	
Gambar berkaitan projek *Picture related to project* (700kb)		

		
Rating/Level	JABATAN	

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Borang ini perlu diisi oleh pelajar dan dihantar kepada penyelia/ penyelaras projek dalam bentuk hardcopy dan softcopy (borang LAMPIRAN J) dan gambar hasil projek dalam format jpeg/bitmap) bersama laporan akhir dan hasil projek.