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Recent Publications

Published

1. Jaafar, N.A., Abdullah, A.B., and Samad, Z., "Optimization of WEDM Cutting Parameters on Surface Roughness of 2379 Steel Using Taguchi Method," *SAE Int. J. Mater. Manf.* 11(2):2018 Accepted

2. M.S. Abdullah, A.B. Abdullah, M.H. Hassan and Z. Samad, "Bearing Strength and Progressive Failure Analysis of Punched Hole of CFRP Under Tensile Loading". *International Journal of Advanced Manufacturing Technology.*

Active Grants

Title: Formability analysis of tailor welded blanks of steel and aluminium alloys.
RUI (2018 – 2020)

Title: Bearing strength and progressive failure analysis of punched hole under tensile loading.
Bridging Grant (2018-2019)



Preface

Manufacturing is about tooling. In a manufacturing line, from beginning till the end, involve tooling. Therefore, every manufacturing engineer should have this knowledge. Tooling Design is one of core courses that every student under manufacturing engineering with management programme at the School of Mechanical Engineering Universiti Sains Malaysia must take. The first time the course was offered ten year back, the application is on the design, simulation and prototype development of the plastic injection mold. Starts from year 2012-2013 session, where the same module used but the



application is on the sheet metal forming tool and die. In the course, usually students work in group. At the end of the semester, they need to fabricate the tooling and prove their tooling working by assessing the quality of the formed sheet part as expected.



Viva Voce

Alhamdulillah, one of our group members successfully gone thru his viva voce on 28th of March 2018. The viva session took approximately 2 hours. Congratulation to Muhammad Nazmi Nashrudin for his success and thank you to the examiners who give positive comments on his work. Hoping that this achievement will encourage other group members in completing their study.



Photo of Muhammad Nazmi with his supervisor and examiners after viva

Undergraduate Tooling Design Course 2017-2018

This year, 33 students of Manufacturing Engineering with Management programme have registered in this course. They have been divided into 6 groups. The assessment of the course is based on few aspects and measured according to the

TOOLING DESIGN INDUSTRIAL TALK SERIES
Organized by School of Mechanical Engineering, Universiti Sains Malaysia

Series 1
Mr Boey Kok Hong
Founder and Managing Director
Solid Precision Engineering Sdn Bhd
Title: Tooling Design: What Need to Emphasis?
Date: 17th of April 2018
Venue: Seminar Room, PP Mekanik

Series 2
Mr Wan Ishak bin Ismail
Manager
Norstar Technology Sdn Bhd
Title: Tooling Design: What Should I Know First?
Date: 17th of April 2018
Venue: Seminar Room, PP Mekanik

All are invited
Attendance for students taking EPD332 Tooling Design is compulsory

Program Outcome (PO) set in the beginning of the semester. In this course, each of the groups needs to design and fabricate a simple blanking tooling. This year, two industrial talk series have been arranged. This talk is to expose the students about recent technology and demand regarding to tooling design. Both speakers, Mr Boey and Mr Wan Ishak have experience more than 20 years in the field. Mr Boey, own a company Solid Precion Engineering Sdn Bhd based in Sungai Petani. The company produce various sheet metal products and has capability in production of tooling in-house. While Mr Wan Ishak is managing a company located at Perda Industrial Area name Norstar Technology Sdn. Bhd. The company produced various metal parts and capable to produce tooling in-house. Among their customers are Honda in

producing motorcycle parts and Nansin in producing caster wheel parts. The details of both presenters highlight will be further discussed below.

Contact Details

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Industrial Talk

Date: 17th of April 2018

Venue: Seminar Room, School of Mechanical Engineering, Universiti Sains Malaysia

Speaker: Mr Boey Kok Hong (MD and Founder, Solid Precision Engineering Sdn Bhd)

Summary of the Talk

Mr Boey begins his talk with brief introduction about his company. Variants of product produced by his company are also shown. He stresses the importance of innovation and competitive solution for cost reduction in his talk. He also gives some tips for the student and what is typically expected by a company on fresh graduates.

He further his talk by focusing on the tooling design and mention few criteria that designer should take into consideration in their design such

as maintainability, that can lead to easy setup and quick replacement, the two key important aspects that may differentiate between good and moderate tooling design.

Later, Mr Boey went into details in tooling design, where He mentioned about die clearance and the difference between existing guideline and practicing by industries. Furthermore, about the die deflection, that cause by various sources such as vibration, thermal properties of the die material and the effect to the produced part.

Lastly, He rose about the current issue related to health, safety, environment and society. What is the current situation and action taken by relevant industries with this issues also mention.



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Date: 24th of April 2018

Venue: Seminar Room, School of Mechanical Engineering, Universiti Sains Malaysia

Speaker: Mr Wan Ishak Bin Ismail (Manager, Norstar Technology Sdn Bhd)

Summary of the Talk

Mr Wan Ishak starts his talk by mentioning about the importance of tooling engineer and what is their role is the manufacturing line. In his talk, Mr Wan Ishak preferred to use whiteboard than using slide presentation. He said manufacturing is about tooling as the tooling required at till the end of the production line. He mentioned also about the tooling cost and volume of production as the main criteria to be considered in the design of the tooling. Similar to Mr Boey, Mr Wan Ishak again emphasized on role of tool engineer, where their decision may influence the company.

In regards to the student project, Mr Wan Ishak gives some advice and clue in order to ensure their design successful. Importance of alignment and how to deal with it. The use of dowel pin or leader pin in ensuring precision blanking operation also being discussed. He also briefs them, the basic configuration of a good tooling design.



Advertisement Space (contact mebaha@usm.my)