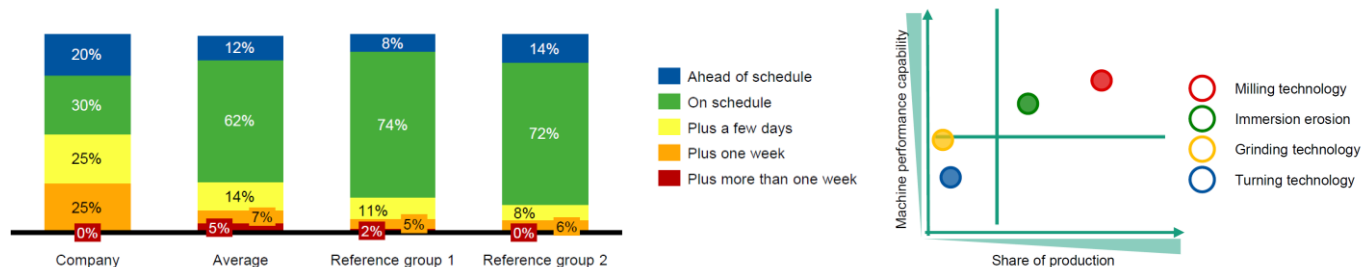


Overseas Training on Technology Benchmarking System and Advanced Tool Fabrication and Moulding Technology in Germany

17-25 October 2018



Introduction:

Training Date :

17-25 October 2018

The worldwide trends in the production industry put serious pressure on tooling companies forcing to enhance time, quality and costs. However, there are several challenges such as price pressure on materials, increasing labour cost, shortened lead times, innovation pressure which the companies have to face nowadays, so suitable measures have to be taken to tackle the challenges as mentioned. There are currently few approaches for successful German tooling companies, they are product and process standardization, systematic planning and scheduling, automation and new manufacturing technologies, benchmarking with competitors and best practice companies. These new approaches would be the key factors for local manufacturers to be competitive among the world and take the lead in local areas.

The theme of this training program is to introduce the world class technology benchmarking model and methodology to mould & die and related industries as well as the best practices adopted by overseas mould and die makers and companies with internal tool shops in tool making. The key performance indicators under the benchmarking model includes minimum tolerances in machining, performance of milling, precision tooling development capabilities, use of advanced technologies, process planning efficiency and flexibility, value creation per employee, etc.. Besides sharing by different experts in achieving the current best performance according to world class technology benchmarking study, participants will be arranged to have on-site case studies and appreciation on the operation best practices at best performer's factory.

Besides, this program will address on a series of new technologies on advanced machining and moulding technology related to tooling and plastics industry. It includes composite moulding, robotic applications in tool making and moulding, high hydrolysis resistance and high temperature plastic moulding as well as human machine interface solutions with interactive touch sensor technology. This program is supported by Hong Kong Mould and Die Council

Sender: Hong Kong Productivity Council, 78 Tat Chee Avenue, Kowloon, Hong Kong, Tel: (852) 2788-6262, e-mail: edm@hkpc.org

發送者: 香港生產力促進局 香港九龍達之路 78 號生產力大樓 電話: (852) 2788-6262, e-mail: edm@hkpc.org。

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Training Fee :	<p>Overseas training course fee: HK\$36,000 per participant.</p> <p>Fee included: Economy class air ticket, airport tax, fuel & security charges, hotel on twin room shared basis, inland transportation, accident insurance.</p> <p>Fee excludes: Lunches & dinners, visa application fee, additional fee for special flight and hotel arrangement, tour guide & driver tips and other expenses not mentioned.</p>
Who should attend :	<p>Directors, managers, supervisors and engineer in mould & die, plastics & and related industries.</p>
Quota :	<p>Limited to 25 participants</p>
Language:	<p>English</p>
Enrolment :	<p>To enroll, please complete the enrolment form and fax it to HKPC at 852-27885522 for registration, then send the completed form together with the appropriate fee to SMD, 3/F, HKPC Building, 78 Tat Chee Avenue, Kowloon, Hong Kong (Attn: Mr. Henry Yu) on or before 21 September 2018. All cheques should be crossed and made payable to Hong Kong Productivity Council. Please also write down the name of training course at the back of the cheque.</p>
Enquiry :	<p>Mr. Henry Yu, Mr. Penny Chan Tel: (852) 2788-5683, 2788-5749 Fax: 852-2788 5522 E-mail: henrychu@hkpc.org, pennychan@hkpc.org</p>



Speakers:

The course will be conducted by experts and consultants from WBA Werkzeugbau Akademie, Fraunhofer IGCV, Festo Polymer-Office (2017 Overall Winner on Technology Benchmarking in Germany), KUKA Systems, HKPC and other experts from Germany

WBA Werkzeugbau Akademie (German Academy of Mould and Die Industry)

**WBA
WERKZEUGBAU
AKADEMIE**

- Specialized in the topics of Casting technology, Composites and Processing technology.
- Leading partner of the tool and die industry in the business areas of industry consulting, further education and research.
- Reproduce the entire process chain of tool making with its own demonstration tool shop and develop innovative solutions together with over 80 member companies for the industry sector in Germany.
- As a platform for the tool and die industry, the WBA, with its 35 employees, builds a connection between science and industry.

Fraunhofer Institute for Casting, Composite and Processing Technology (IGCV)

- Specialized in the topics of Casting technology, Composites and Processing technology
- Specialized in developing advanced production technologies such as Intelligent networked production, Flexible production, Networked modeling and simulation and Additive manufacturing

KUKA Systems GmbH

- Leading company worldwide and specialized in robot systems, production machines, production systems, etc.
- The robots are widely used in various industries but not limited to Automotive Industry, Electronics Industry, Plastics Industry, Metal Industry

Festo Polymer GmbH***(Overall Winner of Excellence in Production 2017 under Technology Benchmarking Study)***

- Leading global supplier in automation technology
- Performance leader in industrial training and education programs.
- Comprehensive automation concept including the optimal use of fully automated production cells which integrate a complete sequence of manufacturing steps
- Implemented Polymer-Office and use of Rapid Steel Tools which allow to include the tool shop and its expertise at an early stage of the product development process

Tentative Itinerary

Date	Time	Content
17 Oct (Wednesday)	23:05	Depart from HK to Munich at midnight by Lufthansa flight LH731
18 Oct (Thursday)	05:05	Arrive Munich on the early morning
	Morning (3.5hr)	Lecture and workshop 1: Plastic and Metal Composite Moulding (by experts of Fraunhofer Institute for Fraunhofer Research Institution for Casting, Composite and Processing Technology IGCV) <ul style="list-style-type: none"> ✧ Forming of filament reinforced thermal plastic composites and metal fiber composites ✧ On-line process monitoring ✧ Materials design and testing ✧ CFRP engineering and manufacturing ✧ Recycling ✧ Demonstration of new technologies at laboratories
	Afternoon (2.5hr)	Lecture and workshop 2: Robotics Applications in Moulding and Mould Fabrications (by experts of KUKA Systems GmbH) <ul style="list-style-type: none"> ✧ Different kinds of robots and their applications ✧ Integrated robotic automation systems for mould & die making and plastic moulding ✧ Human-machine collaboration robots ✧ Sensor applications and intelligent robots ✧ Case studies ✧ Practical appreciation of robot applications Overnight in Augsburg/Munich
19 Oct (Friday)	08:00	Transfer to Friedrichshafen
	Morning (3hr)	Lecture and Workshop 3: High Hydrolysis Resistance and High Temperature Plastic Moulding (by experts of EMS-CHEMIE AG) <ul style="list-style-type: none"> ✧ Properties of Grivory HT (High Hydrolysis Resistance) (High Temperature) Moulding ✧ Adaptation of Grivory HT in tooling design and the optimization of process parameters ✧ Light weighting with Grivory HT ✧ Case studies ✧ Demonstration on Grivory HT technology
	Afternoon (3hr)	Lecture and Workshop 4: HMI solutions with Interactive Touch Sensor Technology (by experts of PolyIC GmbH & Co. KG) <ul style="list-style-type: none"> ✧ Latest development of human machine interface (HMI) solutions ✧ Application of HMI solutions into tooling application using touch sensor technology ✧ Case studies ✧ Demonstration on latest HMI solutions and its applications in precision mould and die fabrication Overnight in Lindau/Friedrichshafen

20 Oct (Saturday)	Morning (3.5 hr)	<p>Lecture and Workshop 5: Latest development in Plastic Moulding (by various experts)</p> <ul style="list-style-type: none"> ✧ Injection moulding of new plastic materials, parts with extensive complexity and high strength materials ✧ Sustainable recycling and processing automation ✧ Lightweight design, new plastic foaming technologies and composite applications ✧ Case studies ✧ Demonstration of new plastic and composite moulding technologies <p>Overnight in Lindau/Ravensburg/Friedrichshafen</p>
	Afternoon (2hr)	<p>Lecture 6: Roadmap for Moulding and Tool Fabrication Technology and Introduction to Technology Benchmarking for Tooling (by Francis Lai, Senior Consultant, HKPC)</p> <ul style="list-style-type: none"> ✧ Summary and discussions on latest mould fabrication and moulding technologies ✧ Insight on Hong Kong mould and die industry technology development ✧ Introduction to world class technology benchmarking ✧ Key technological and operational performance indicators under world class tool makers. <p>Transfer to Stuttgart</p>
21 Oct (Sunday)	Whole day	<p>Transfer from Stuttgart to Aachen</p> <p>Free time on the late afternoon and evening</p> <p>Overnight in Aachen</p>
22 Oct (Monday)	Morning (4 hr)	<p>Lecture 7 with workshop: World Class Technology Benchmarking for Tooling Industry – Best Practices; Product and Process Standardization [by consultants of WBA Werkzeugbau Akademie (mould and die academy, Aachen) and experts from outstanding mould & die makers according to annual benchmarking study in Germany]</p> <p>Current Trends and Development of industrialization</p> <ul style="list-style-type: none"> ✧ Overview of measures used by successful world class tooling companies to tackle the current technological, operational and business challenges ✧ Successful best practices representing the continuous development of German tool and die companies during the last decade. ✧ Concepts of industrialization for tooling companies to increase productivity <p>The benefits of product and process standardization</p> <ul style="list-style-type: none"> ✧ Methods of product standardization for managing product variety and reduce costs ✧ Process standardization measures for reduction of lead times and increase process efficiency ✧ Best practice methods for standardization at successful world class mould and die companies <p>Demonstration on best practices and newest operation tools in WBA Tool Shop</p> <ul style="list-style-type: none"> ✧ Hands-on approaches for planning and scheduling as well as shopfloor management within the WBA demonstration tool shop ✧ Latest research results regarding Virtual Reality and Augmented Reality in the mould and die industry <p>Lunch in Aachen</p>

	<p>Afternoon (3.5 hr)</p>	<p>Lecture 8 with workshop: World Class Technology Benchmarking for Tooling Industry – Lead Time Reduction, Planning & Scheduling [by consultants of WBA Werkzeugbau Akademie (mould and die academy, Aachen) and experts from outstanding mould & die makers according to annual benchmarking study in Germany]</p> <p>Material flow and synchronization for lead time reduction</p> <ul style="list-style-type: none"> ✧ Layout of successful world class tooling companies and how a material-flow oriented layout helps reducing lead times ✧ Synchronization approach and how it reduces lead times ✧ Material flow optimization at best practice companies and its effect in improving lead times <p>Learning game/exercise: Lead time reduction</p> <ul style="list-style-type: none"> ✧ Application of the content of the previous lectures in a learning game ✧ Hands-on experience of the effects of efficient industrialization <p>Planning and scheduling for reliable lead times</p> <ul style="list-style-type: none"> ✧ Introduction of the established German 3-stage approach for planning in the tool and die industry ✧ Best-practice examples for the combination of digital planning and manual planning on the shopfloor and review of effects on employee satisfaction, timeliness and lead time <p>Overnight in Aachen</p>
<p>23 Oct (Tuesday)</p>	<p>Whole day (6 hr)</p>	<p>Lecture 9 with workshop: Case Studies on World Class Best Practices [by consultants of WBA Werkzeugbau Akademie (mould and die academy, Aachen) and experts from outstanding mould & die makers according to annual benchmarking study in Germany]</p> <ul style="list-style-type: none"> ✧ Case studies on process and product standardization ✧ Case studies on lead time reduction ✧ Case studies on comprehensive automation concept applications in a tool shop ✧ Optimal use of fully automated production cells which integrate a complete sequence of manufacturing steps ✧ Use of rapid steel tools which allow to include the tool shop and its expertise at an early stage of the product development process ✧ Case studies on seamless integration of product development tool production process ✧ Practical appreciation in Festo Polymer GmbH internal tool shop on technology benchmarking and best operation practices. (2017 overall winner on technology benchmarking in Germany) <p>Overnight in Aachen</p>

24 Oct (Wednesday)	Morning (3 hr)	<p>Lecture 10: Adoption of New Technology and Manufacturing Systems[by consultants of WBA Werkzeugbau Akademie (mould and die academy, Aachen) and experts from outstanding mould & die makers according to annual benchmarking study in Germany]</p> <p>Additive manufacturing and integrated process chains</p> <ul style="list-style-type: none"> ✧ Development and improvement of manufacturing technologies for efficiency enhancement ✧ New manufacturing technologies (e.g. additive manufacturing) and the related changes for creating additional customer value ✧ Key steps to implement automation in a way that not only labour, but overall cost is reduced <p>Industry 4.0 in the tooling industry</p> <ul style="list-style-type: none"> ✧ German approach on industry 4.0 in the tooling industry ✧ Best-practices for successful implementation of industry 4.0 <p>Lunch in Aachen</p>
	Afternoon (2 hr)	<p>Lecture 11 with workshop: Industry 4.0 Demonstration and Program Wrap-up [by consultants of WBA Werkzeugbau Akademie (mould and die academy, Aachen) and experts from outstanding mould & die makers according to annual benchmarking study in Germany]</p> <p>Industry 4.0 practical appreciation at demo factory in Aachen</p> <ul style="list-style-type: none"> ✧ Applications for increasing quality and process efficiency (e.g. digitally guided assembly) ✧ Necessary steps to successfully implement industry 4.0 in mould and die shops <p>Wrap-up</p> <ul style="list-style-type: none"> ✧ Discussions and conclusions on technology benchmarking and best practices for mould & die industry ✧ Next steps for implementation of learned contents in Hong Kong mould and die shops <p>15:00 Transfer from Aachen to Frankfurt, arrive at around 19:00</p> <p>22:10 Return from Frankfurt to HK by Lufthansa flight LH796</p>
25 Oct (Thursday)	15:45	Arrive HK on the afternoon

<<Air ticket, hotel and tour arrangement for this training course are arranged by licensed travel agent>>

Organiser



Supporting Organisation



製造科技

MANUFACTURING
TECHNOLOGY



Program: Overseas Training on Technology Benchmarking Systems and Advanced Tool Fabrication and Moulding Technology in Germany

Duration : 17-25/10/2018

Training Fee

HK\$36,000 per participant

Including - airport tax, fuel and security charges, hotel on twin room shared basis, inland transportation, and accident insurance

Application

To enroll, please complete the attached enrolment form and fax it to HKPC at (852) 2788 5522 for prior registration, then send the completed form together with the appropriate fee to HKPC at SMD, 3/F, HKPC Building, 78 Tat Chee Avenue, Kowloon (Attn: Mr. Henry YU) on or before 21 Sep 2017 [All cheques should be crossed and made payable to Hong Kong Productivity Council. Please also write down the course name at the back of the cheque]

Enrolment deadline: 21 September 2017 (Friday); first enrolment and payment first serve basis

Contact Person

Mr. Henry Yu Tel: (852) 2788 5683, Mr. Penny Chan Tel: (852) 27885749; Fax: 2788 5522 or email:

henrychu@hkpc.org or pennychan@hkpc.org

1. English Name 英文姓名 Mr./Miss/Mrs. (same as I.D. card) _____

Chinese Name 中文姓名 (same as I.D. card) _____

2. Organization 受僱公司名稱 _____

Position 職位 _____

Business Address 辦公室地址 _____

Website 網址 _____

Tel 電話 _____ Fax 傳真 _____ Contact Person 聯絡人 _____

E-mail 電郵 _____ Mobile (Mainland) 內地手提 / Mobile (HK) 香港手提 _____

3. Products/Service Category 產品及服務範疇 _____

4. Travel Document Owned 所持旅遊證件 HKSAR BNO Others, please specify 其他，請註明 _____

5. Please also specify special travel arrangement required (e.g. stay behind in Germany etc.)

請填寫所需之特別旅遊安排 (如：單人房、停留德國等等)

Please also attach one recent photo and a business card with company logo on application

報名時請連同一張印有公司商標的名片遞交本局

***For the purpose of processing my study mission/overseas training application, I agree that the information provided may be passed to travel agency, visiting organizations and other relevant organizing bodies, both locally and in visiting location.**

* 為處理本人的考察團/海外培訓申請，本人同意所提交的資料可交予本地及海外考察/培訓地點的旅行社、到訪機構及其它與是次活動有關的機構。

Signature 簽名 _____ **Date 日期** _____

閣下提供之個人資料 (包括姓名、聯絡方法和其他資料) 將會用於處理、評估和管理閣下登記出席本活動之用。

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本人反對與香港生產力促進局合辦本活動的合作夥伴使用個人資料於擬作出的任何推廣用途

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近照一張

IMPORTANT 注意：**Please pay attention on the clauses for enrollment and responsibility for Participants as below:****請各申請者留意以下之報名及責任細則：**

1. Upon submission of its application (Copy of enrollment form is accepted), Applicant shall pay to HKPC the Participation Fee.
報名表（可用影印本）必須連同費用於考察團/ 海外培訓（包括中國大陸）開始前一併繳交，否則報名無效。
2. All payments by the Participant to HKPC shall be made promptly without any deduction, set-off or counterclaim by cheque, credit card or EPS to HKPC.
本局建議申請者以信用卡、易辦事或支票繳交費用。費用收據以本局蓋印方為有效，支票收妥作實
3. If Participant wishes to withdraw its application, it may do so by notice in writing to HKPC and obey to the regulations as below:
 - ◆ At least 30 days before the start of the Mission/Training, an administration fee of HK\$500 will be charged to Participant.
 - ◆ 8 to 30 days before the start of the Mission/ Training, the Participation Fee may be refunded subject to the deduction of any costs already paid by HKPC which are otherwise unrecoverable through HKPC's service providers. An administration fee of HK\$500 will be charged to Participant.
 - ◆ Less than 7 days before the start of the Mission/Training, Participation fee will not be refunded.
 申請者於考察團/ 海外培訓（包括中國大陸）開始前通知本局退團，必須遵守以下之條款：
 - ◆ 行程開始前最少30天通知本局退團，需繳交港幣500元正作為行政費用；
 - ◆ 行程開始前8天至30天內通知本局退團，需繳交港幣500元正作為行政費用，及所有旅行社/ 航空公司機票及酒店之費用，實際費用將按當時的價格為準。
 - ◆ 行程開始前7天通知本局退團，必須負責繳交全數團費。
4. Participant shall be responsible for their own visa arrangements. In the event that a participant is refused entry into any country on a Mission, HKPC shall not be liable for any loss of damage suffered. And the payment refund procedures is same as Clause (3).
申請者有責任確保出發前攜帶有效的旅遊證件，如因旅遊證件而不能如期出發，則按以上條款（3）作處理。
5. If Participant wishes to nominate others person to attend the Mission/Training instead of its own, Participant shall pay any additional costs charged by the HKPC's service providers.
申請者如在出發前30天內提名他人代替其本人出席考察團/ 海外培訓（包括中國大陸），旅行社/ 航空公司有機會收取附加費，參加者需自行承擔有關費用。
6. HKPC reserves the right in any circumstances to change the content of the Mission/Training (i.e. accommodation, visit locations, dates & itinerary and meals) without prior notice.
香港生產力促進局保留在任何情況下更改考察團/ 海外培訓（包括中國大陸）的內容（包括：酒店、地點、行程及膳食）的權利，而不會另作通知。
7. Fees may be subject to changes, if the fuel or tax is increased by the airline.
如航空公司於出發前30天內調高燃油附加費或機場稅(每人計，國際線加內陸機)，本局將有權向申請者追收已調高之差額。
8. The Participant shall settle the addition charges for any special arrangements (i.e. departure/return date or flight arrangement).
如申請者提出特別更改要求（如出發日期、回程日期或機位安排），則需要視乎航空公司的安排，申請者亦需自行承擔旅行社/ 航空公司收取之附加費，並以當時的價格為準。
9. The basic travel insurance for local participants has been covered by HKPC. Participants may consider to purchase additional travel insurance based on personal needs. Please kindly refer to our website (www.hkpc.org), choose "Training & Venues" and download the "Travel Insurance for Study Mission" for further details on the insured items, coverage and terms.
Remarks:
(a) Applicable to Hong Kong residents, for other participants, please kindly contact HKPC for further insurance details.
(b) The above mentioned insurance shall not cover PRC citizen while travelling within territory of PRC, and/or local citizen while travelling within home country.
本局已為參加者代為購買基本的意外保險，參加者亦可按個人需要，自行購買額外的旅遊保險。有關由本局承保之意外保險內容、範圍及條款，參加者可於本局之網頁（www.hkpc.org）選擇<培訓及場地>，並下載<考察團旅遊保險>。
註：
(a) 此條款只適用於香港居民，如其他人士，請聯絡本局查詢有關保險詳情。This clause is only
(b) 以上提及之保險不涵蓋內地居民在(前往)內地之考察團/海外培訓，及/或任何人士在(前往)原居地的考察團/海外培訓。
10. As activities in the Mission/Training may have various degrees of risk, Participants should decide whether they should involve base on their physical conditions, ages and the weather conditions. During the activities, Participants should comply with the rules and guidelines form HKPC's staff to avoid accidents. HKPC shall not be liable for any travel insurance claims and its results.
由於考察團/海外培訓行程以內之各類型活動均存在不同程度的風險，參加者在參與活動時應衡量個人身體狀況及年齡，並考慮當時的天氣情況，以評估應否參與有關活動。另參加者在活動進行中，應遵守有關活動的規則、本局工作人員的指引及安排，做足安全措施，以免發生意外。對任何旅遊保險索償及其索償結果，香港生產力促進局概不承擔任何責任。
11. HKPC shall not be liable for any loss, damage or personal injury howsoever suffered by or caused to the Participant due to any activities not included in the Mission/Training.
如參加者因參與其他考察團/海外培訓上不包括之各類型活動而發生意外，香港生產力促進局概不承擔任何責任。
12. The information provided by Applicant may be passed to travel agency, visiting organizations and other relevant organizing bodies, both locally and in visiting location and HKPC internal audit and relevant procedures for the purpose of processing its application.
申請者所提供的資料，將用於考察團/ 海外培訓的申請，並交予本地及海外考察團/ 海外培訓地點的旅行社、到訪機構及其它與是次活動相關之機構和香港生產力促進局內部統計分析及有關的程序上。