

**SME Development Fund (SDF)/
Dedicated Fund on Branding, Upgrading and Domestic Sales (BUD Fund)
(Organisation Support Programme) (OSP)**

Final Report on Approved Project

Project ref. no. : BUD 13 2 002

Project title : An In-Depth Industry Analysis and Strategic Roadmap to
Upgrade Hong Kong Traditional Surface Finishing Industries to
Diversify into High-Value Added Components Markets for
Domestic Sales Growth

Period covered : From 01/01/14 to 31/12/15
(dd/mm/yy) (dd/mm/yy)

1. Project Details

(Please mark with "*" if any of the following project details is different from that in the project proposal appended to the project agreement.)

Project Summary (in about 150 words)

Whether it be an industrial or consumer product, one usually applies such a product by interacting with its material surface, instead of the bulk, which determines its decorative finishing and/or functionality. Surface finishing services cover a diverse spectrum of industrial processes, such as: (1) electroplating (a wet chemical process conducted in tanks depositing a thin-film coating of metal on either a metallic or plastic base material); (2) electroforming (a process similar to electroplating but for thicker coating on wax to be removed after deposition to fabricate hollow product structure, e.g. jewellery rings, earrings, models, etc); (3) spray organic coating (a wet chemical process in a semi-vacuum chamber for applying paints or powders on base materials); (4) vacuum coating (can be a wet chemical or dry physical process taken place in a vacuum chamber for depositing thin-film metal or ceramic coating on either metallic, plastic or ceramic base materials); (5) mechanical surface treatment (a mechanical process to apply force on base materials of metals, plastics, or ceramics to modify the surface appearances, textures, or functionality, e.g. polishing, sandblasting), etc, to mass-produce specific appearances and performance on bulk materials, where consumers see and experience. Therefore, many products can simply not be realized and many industries cannot survive without surface finishing providers.

Local traditional surface finishing industries serve many other manufacturing industries in the business-to-business manner in products ranging from decorative colour tuning to functional electronics assembly. They currently suffer from a lack of industrial upgrade strategy in understanding market requirements of high-value added component sectors, in counteracting compliance and quality driven issues, and in revitalizing their polluted and non-innovative images required to capture lucrative domestic component sales market in the Mainland China. Systematic strategic development of industrial upgrade for the industries is currently unavailable.

This project aims to conduct a comprehensive analysis to identify, study and evaluate gaps in product design and development, production and environmental technologies, commercial research and development, compliance and management systems for local surface finishing industries in order to diversify their businesses to manufacture high-value added products with promising potentials in domestic markets, such as automotive parts, aeronautical parts, medical devices, electronics and 3C products, and electrical appliances. This part of the project work will be implemented by means of organization of forums on specific surface finishing requirements of high-value added component sectors, preliminary survey by questionnaires, primary research interviews and one-day onsite assessment visits to a pool of local companies active in the surface finishing industries. Further intensive investigations and analysis on how successful local surface finishing businesses diversify their operations into manufacturing of high-value added component products will also be conducted through 5 man-day detailed onsite assessment visits with the findings disseminated through sector-specific seminars to benefit more local companies directly on the value chain. The in-depth industry analysis will also be conducted through the visit of some overseas exhibitions in the targeted high-value added component industries. The up-to-date market information collected from these exhibitions will be useful for developing the upgrading strategy for local surface finishing industry.

A roadmap will subsequently be developed, formulated and distributed to recommend possible strategies and implementation advices for local surface finishing industries to refresh, repackage and reposition their businesses into innovative, technological, environmentally friendly and fashionable industries to capture the high-value added market sectors in domestic markets by providing the latest market information of industries, role models and guidelines. A final dissemination workshop will be organized to present the full strategic roadmap to the public and copies of the strategic roadmap will be distributed freely, which will be cost-effective and applicable to a diverse range of local surface finishing industries serving end-users in domestic markets as a whole.

Project Objective(s) (in about 80 words)

This project aims to explore and execute two distinctive yet lateral areas for the overall industrial upgrade of traditional surface finishing industries as follows:

- **In-Depth Industry Analysis:** To conduct a comprehensive industry analysis to identify, study and evaluate essential market requirements and gaps in product design and development, production and environmental technologies, commercial research and development, compliance and management systems for local surface finishing industries in order to capture new business opportunities in manufacturing high-value added products with promising potentials in domestic markets, such as automotive parts, aeronautical parts, medical device, electronics and 3C products, and electrical appliances.

2. Summary of Project Results

Project Deliverables

(Please list out the project deliverables as stated in the project proposal appended to the project agreement and provide details related to the actual result achieved for each of them.)

	Project deliverable	Quantifiable target number (e.g. 100 participants)	Actual result achieved (e.g. 90 participants)	Reasons for not achieving the target, if applicable (e.g. The total number of registered participants was over 120. However, some of them did not show up eventually. Will strengthen promotion and try to make up for the shortfall in the following two seminars.)
a)	Organize five one-day forums (one for each selected sector: automotive parts, aeronautical parts, medical devices, electronics and 3C products, and electrical appliances) and coordinate experts from Mainland and/or overseas prestigious brands to speak in these forums on specific surface finishing requirements on their products in terms of product design & development, production and environmental technologies, commercial research and development, and compliance and management systems for local surface finishing industries.	250 participants	262 participants	
b)	<p>An in-depth industry analysis to identify, study and evaluate gaps in product design, production and environmental technologies, commercial research and development, compliance and management systems for local surface finishing industries in order to diversify their businesses to manufacture high-value added component products with promising market potentials, such as automotive parts, aeronautical parts, medical devices, electronics and 3C products, and electrical appliances. The study will consist of two parts:</p> <ul style="list-style-type: none"> • A preliminary questionnaire survey with 150 surface finishing manufacturers and one-day on-site visits for primary research interviews and assessments for 30 local surface finishing manufacturers; • A detailed study on the latest surface finishing trends and market requirements in terms of product design and development, production and environmental technologies, commercial research and development, compliance and management systems of 5 selected high value-added sectors through a 	<ul style="list-style-type: none"> • 150 local companies (questionnaire survey) • 30 local companies (on-site preliminary study) • 15 local companies (on-site detailed investigations) 	<ul style="list-style-type: none"> • 154 local companies (questionnaire survey) • 32 local companies (on-site preliminary study) • 15 local companies (on-site detailed investigations) 	

	5 man-day on-site detailed investigation and analysis for 15 companies (3 companies under each targeted sector) to assist in constructing a guidance system for strategic roadmap development of industrial upgrade and domestic sales. The in-depth industry analysis also includes the collection of recent market information through the visits of overseas exhibitions in the high-value added component products industries.			
c)	Five half-day seminars (one for each selected sector) to disseminate the in-depth industry analysis on market requirement gaps in product design and development, production and environmental technologies, commercial research and development, compliance and management systems and recommended solutions to upgrade existing businesses into high-value added products.	250 participants	264 participants	
d)	Publish a strategic roadmap and distribute 1,500 copies freely available to local surface finishing companies to guide the industries to upgrade their production and environmental technologies, compliance and management systems in order to diversify their businesses into high-value added sectors.	1,500 local companies	1,500 local companies	
e)	One final half-day workshop to disseminate the strategic roadmap to local surface finishing industries.	100 participants	104 participants	

Details of the deliverables (e.g. date, duration, venue, speaker, topic discussed, etc.)
(Please list out in table format if necessary.)

	Project deliverable	Detail					
		Event:	Date	Time	Venue	Topic	Speaker
a)	five one-day forums	Expert Forum in Electronics & 3C Products	29 May 2014	10am – 5 pm	Conference Room F6, 4/F, Dongguan Regal Palace Hotel, No 1 Furniture Boulevard, Houjie Town, Dongguan	<ul style="list-style-type: none"> Trend of plating technologies in electronics, automobile industries of Korea and trend of surface finishing industry The gateway for electronics products to overseas and domestic markets Innovative Technology for MID Applications Electronics cleaning & contamination control, green technology trend Application of Ion Plating - from Coating Design to High Power Pulse Magnetron Sputtering Technology 3C產品鍍鋁合金外觀件塗層設計原理與製備技術 	<ul style="list-style-type: none"> Prof. JIANG Bai-ling, College of Materials Science and Engineering, Nanjing Tech University Dr. Haeduck PARK, Vice Chairman of the Korean Institute of Surface Engineering Ms Miranda LEE, Deputy Director, Customer Testing Services & Electrical & Electronics Technology, SGS Hong Kong Limited Dr. Pokka PANG, Product Specialist, Atotech Asia Pacific Ltd Mr. George IP, Sr. Application Development Specialist, 3M Asia Pacific Region Dr. Wai Yin LO, Senior Consultant, Hong Kong Productivity Council
		Expert Forum in Medical Device	25 July 2014	10 am – 5 pm	Conference Hall 04-05, 2/F,	<ul style="list-style-type: none"> Surface finishing for the medical devices industry: How new “smart” finishes and coatings are 	<ul style="list-style-type: none"> Dr. David Sarphie, CEO, Bio Nano Consulting, London, UK

					Lakeside 2, Hong Kong Science Park, Pak Shek Kok, Sha Tin, Hong Kong	<ul style="list-style-type: none"> benefitting medical devices Medical Device Surface Treatment – A Regulatory Prospective Surface Treatments and Their Applications for Healthcare and Medical Devices Surface Finishing and Micro Fabrication Technology for Biomedical Applications 	<ul style="list-style-type: none"> Dr. Christopher Chan, Office of Medical Device Evaluation, Industrial Technology Research Institute, Taiwan Dr. Connie Kwok, Director of Research and Development (Bio and Healthcare), Nano and Advanced Materials Institute Limited (NAMI) Dr. Richard Lau, Nano and Advanced Materials Institute Limited (NAMI) Mr. Eric Yau, Dr. Carmen Fung, Hong Kong Productivity Council
	Expert Forum in Aeronautical and Transportation Parts	12 Sep 2014	10 am – 5 pm	Room 108, 1/F, HKPC Building, 78 Tat Chee Avenue, Kowloon Tong, Hong Kong	<ul style="list-style-type: none"> Plating requirement and technology for aeronautical parts Quality management system for aerospace industry Aircraft interior and exterior painting application Application of shot peening and advanced coatings in aeronautical and transportation parts manufacturing Innovative Applications for Nickel-Containing Materials 	<ul style="list-style-type: none"> Mr. Henry Chung, Hong Kong Aero Engine Services Limited (HAESL) Mr. Alfred LEUNG, Hong Kong Productivity Council Mr. Hanson Lau, Cathay Pacific Airways Limited Mr. David LAM, General Manager, China, Curtiss-Wright Corporation Mr. Clive Whittington, Nickel Institute 	
	Expert Forum in Electrical Appliance	31 Oct 2014	10 am – 5 pm	Classroom 2-3, G/F, InnoCentre, 72 Tat Chee Avenue, Kowloon Tong, Hong Kong	<ul style="list-style-type: none"> Focus Analysis: The Hong Kong household electrical appliance industry profile and market development trend Business viewpoint on upgrading : The surface treatment technology in household electrical appliance manufacturing Wide-range application: Sol-gel coating on electrical appliance and household product Material Application: Paint and solvent in the household electrical appliance product application Green Strategy for the Electronics & Electrical appliance Industry: Product Responsibility & Low Carbon Manufacturing 	<ul style="list-style-type: none"> Mr. Wing Chu, Economist, Hong Kong Trade Development Council Dr. Ripman Lee, CEO, Mingle Metal (SZ) Co.Ltd Ms. Candy Cheng, Associate Consultant, Hong Kong Productivity Council Mr. Jack Ng, Engineer, Rongchang Chemical Col, Ltd Ms. Tracy Zhou, Consultant, Hong Kong Productivity Council 	
	Expert Forum in Automotive Parts	17 Dec 2014	10 am – 5 pm	Conference room, Dongguan Exhibition International Hotel, Huizhan North Road, Xincheng District, Dongguan	<ul style="list-style-type: none"> The Latest Applications & Developments of Green Surface Finishing Technologies in Auto-making Industry Atotech's Latest Plating Technologies for Automotive Industry Diamond-like Carbon application in automotive parts ASF2015 「東莞國際電鍍工業、表面處理及塗料展」最新資訊發佈 	<ul style="list-style-type: none"> Mr. Fred Yeung, Director, CSS Sourcing Co., Ltd Mr. Benjamin LI, Product Support Specialist, Atotech Asia Pacific Ltd. Dr. W.Y. Lo, Senior Consultant, Hong Kong Productivity Council Mr. Simon Ho, Hong Kong Electroplating Merchant Association 	
b)	An in-depth	• 150 local companies (questionnaire survey)					

	industry analysis	<ul style="list-style-type: none"> • 30 local companies (on-site preliminary study) & • 15 local companies (on-site detailed investigations): <p>1Meyer Aluminium Limited 2Rambo Chemicals (HK) Ltd 3SMC Pneumatics (Hong Kong) Ltd. 4永星化工有限公司 5同興塑膠製品廠有限公司 6南方創新有限公司 7啟文集團有限公司 8得力(中國-香港)有限公司 9創隆實業有限公司 10華新金屬電鍍廠有限公司 11集華國際有限公司 12遠東電鍍設備工程 13領升表面處理設備有限公司 14聯合金屬氧化有限公司 15寶豐堂電子科技有限公司</p>					
c)	Five half-day seminars	Event:	Date	Time	Venue	Topic	Speaker
		Electronics & 3C Product Technology Seminar	3 June 2015	11:30 am – 3:15 pm	Guangdong Modern International Exhibition Center	<ul style="list-style-type: none"> • Sharing on the latest environmental technology and equipment application for surface finishing on electronics product • The latest technology exhibition: SEMICON China 2015 for surface finishing application • Upgrading the surface finishing industry: Market requirement and upgrading solution for surface finishing industry • The latest electro-plating application and market development on 3C electronics products 	<ul style="list-style-type: none"> • Mr. Simon Ho, Senior Manager, Technic (China-HK) Limited • Mr. Eric Yau, Hong Kong Productivity Council • Mr. Eric Kwan, Hong Kong Productivity Council • Mr. Benjamin Li, Atotech Asia Pacific Limited
		Medical Device Technology Seminar	14 Aug 2015	1000 am – 1300 pm	Lecture Theatre, 1/F, HKPC Building, 78 Tat Chee Avenue, Kowloon, Hong Kong	<ul style="list-style-type: none"> • Medical Innovation: Low cost Hollow Metallic Micro-needle Array by Micro-electroforming Technology • Quality Management Systems for Medical Device and Packaging • Innovation Technology Application: Latest Applied Research & Development for Commercialization 	<ul style="list-style-type: none"> • Mr. Eric Yau, Hong Kong Productivity Council • Mr. Edgar Wong, CEO, KITS Company • Dr. Wenyuan Wang, Senior Consultant, Isis Innovation (Hong Kong) Limited
		Electrical Appliance Technology Seminar	14 Aug 2015	1300 pm-1600 pm	Lecture Theatre, 1/F, HKPC Building, 78 Tat Chee Avenue, Kowloon, Hong Kong	<ul style="list-style-type: none"> • Discussion on Anodizing Technology - Metal Finishing • Improving Product Quality: Advanced Plasma Surface Treatment Technology and Equipment for Pre-treatment 	<ul style="list-style-type: none"> • Mr. Robin Lau, Director, United Metal Surface Finishing Limited / committee member, Hong Kong Surface Finishing Society • Mr. Thomas Markert, Director, Plasmatreat Asia Pacific Pte Ltd
		Aeronautical Parts Technology Seminar	18 Sep 2015	09:30 am – 12:30 pm	Room 108, HKPC Building, 78 Tat Chee Avenue, Kowloon, Hong Kong	<ul style="list-style-type: none"> • Nadcap Accreditation (National Aerospace and Defense Contractors Accreditation Program) • Expert Analysis: How surface finishing technologies match up with the market development of aerospace industry? • Industry upgrading - Surface finishing and testing requirement for Aeronautical Parts 	<ul style="list-style-type: none"> • Mr. Liu Le, Manager, PRI Asia Pacific, Performance Review Institute • Prof. Jackson Ho MH, Department of Mechanical Engineering, The Hong Kong Polytechnic University • Dr. W.Y. Lo, Senior Consultant, Hong Kong Productivity Council

		Automotive Parts Technology Seminar	4 Nov 2015	2:30 pm – 5:00 pm	深圳市南山科技園中區高新中二道生產力大樓102室	<ul style="list-style-type: none"> Development of Surface Finishing Industry in Shenzhen Latest Decorative Plating Technology in Automotive Parts Latest Application of Environmental Surface Treatment for Automotive Parts Robotic solution for grinding and polishing application 	<ul style="list-style-type: none"> 雷光先先生, 深圳市工業表面處理行業協會常務副會長 Mr. Nicholas Chang, Managing Director, Winstar Chemicals Company Limited / committee member, Hong Kong Surface Finishing Society Mr. Fan Wentao, SURTEC Company Mr. Chris Chan, CEO, GOA International Limited
d)	Strategic roadmap	<p>1,500 copies delivered to targeted industry stakeholders and associations</p> <p>Table of Content:</p> <p>前言 香港表面處理學會簡介</p> <p>1. 表面處理行業概況 1.1 表面處理行業概況 1.2 市場趨勢分析 1.3 困難及挑戰 1.4 表面處理行業機遇</p> <p>2. 最新產品市場及技術發展 2.1 高增值產品市場及技術需求 2.1.1 3C及電子產品行業市場 2.1.2 醫療器械行業市場 2.1.3 汽車、航空及家電市場</p> <p>3. 香港企業研究分析 3.1 香港表面處理企業概況 3.2 研發及設計能力分析 3.3 生產加工及製造能力分析 3.4 營運及市場發展 3.5 分析總結</p> <p>4. 策略性發展藍圖 4.1 升級轉型策略 4.2 總結</p>					
e)	One final half-day workshop	Event:	Date	Time	Venue	Topic	Speaker
		Final Workshop on Strategic Development Roadmap and Technology for Surface Finishing Industry	11 Dec 2015	2:30 pm – 5:00 pm	香港沙田香港科學園核心大樓1座1樓03會議廳	<ul style="list-style-type: none"> 行業專家：表面處理行業的發展概況 企業分享：電鍍業回流香港的挑戰與機遇 企業分享：升級轉型以打進不同市場 最新海外表面技術應用及策略性藍圖研究報告 	<ul style="list-style-type: none"> 香港表面處理學會理事 楊達生先生 華新金屬電鍍廠有限公司董事總經理 區偉明先生 永星化工有限公司董事總經理 張志恒先生 香港生產力促進局高級顧問 盧偉賢博士

Milestones (in chronological order)

(# Please indicate if the milestone is completed (C), deferred (D) or not achieved (N). If it is deferred, please indicate the revised completion date. For those milestones which are deferred or not achieved, please also provide the reasons under item 2.4.)

<u>Milestone</u>	<u>Original target completion date</u>	<u>Revised completion date</u>	<u>Status</u>
------------------	----------------------------------------	--------------------------------	---------------

(as set out in the approved project proposal appended to the project agreement)	31/12/14	(if applicable)	(C/D/N) #
Plan, arrange and organize five one-day forums on specific surface finishing requirements for the industries of automotive parts, aeronautical parts, medical devices, electronics and 3C products, and electrical appliances,			
(a) respectively.			
Conduct preliminary questionnaire survey for 150 local surface finishing companies.	30/09/15		C
(b) for 150 local surface finishing companies.			
Execute one-day onsite assessment and audit visits for 30 local surface finishing companies.	30/09/15		C
(c) companies.			
Implement 5-man-day onsite visits for detailed investigation and analysis in 15 surface finishing companies.	30/09/15		C
(d) surface finishing companies.			
Collect up-to-date market and product news information by the visits of overseas exhibitions in the sectors of high-value added components.	30/09/15		C
(e) added components.			
Organize five half-day seminars to disseminate in-depth industry analysis found in the preliminary questionnaire survey, one-day onsite assessment and audit visits and 5-man-day intensive onsite visits.	30/09/15		C
(f) visits.			
Draft, edit, print and distribute the strategic roadmap for local surface finishing industries.	31/12/15		C
(g) industries.			
Organize final workshop to disseminate the strategic roadmap to local surface finishing industries.	31/12/15		C
(h) industries.			

Future Plan for Promoting the Project Deliverables (Nil if not applicable)

n.a.
