Specification of Competency Standards
for the Manufacturing Technology Industry
Unit of Competency

Functional Area - Product Manufacturing

Title	Carry out vacuum ion plating surface treatment
Code	106434L3
Range	This unit of competency is applicable to the production department of the plastic industry corporation. Practitioners should be capable to recognise all kinds of vacuum ion plating surface treatment technology and carry out vacuum ion plating surface treatment
Level	3
Credit	6 （For Reference Only）
Competency	Performance Requirements 1. Understand relevant knowledge of all kinds of vacuum ion plating surface treatment technology • Recognise the technology principle, application and end-effects of all kinds of vacuum ion plating surface treatment technology, such as Physical Vapour Deposition (PVD) and Chemical Vapour Deposition (CVD) • Recognise the general methods of vacuum ion plating surface treatment, plastic surface metallizing treatment and plastic surface plasma cleaning process • Recognise the operation of vacuum ion system • Recognise the characteristics of vacuum ion plating surface treatment, such as plasma surface modification and plastic surface film technology, application and control methods • Recognise all kinds of plastic matrix materials and processing methods • Understand the device structure, operation skills and functions of vacuum ion plating surface treatment • Understand all kinds of the operation and device structure of the vacuum pump • Understand the principles and applications of plasma generation • Understand the various methods and techniques of ion electroplating surface treatment, such as low temperature evaporation electroplating techniques, sputtering technology, electron gun evaporation plating technology and arc evaporation technology • Understand the safety using method of high-voltage • Understand the operation of the instrument of precision gas flow • Understand the operation of mechanical and electrical circuits • Understand the applications and safety using methods of all kinds of relevant chemicals, chemical specialty gases and target material of vacuum ion plating surface treatment 2. Apply vacuum ion plating surface treatment and carry out evaluation and improvement • Determine appropriate vacuum ion plating surface treatments for products • In accordance with different target materials, apply the technologies and techniques of plasma, such as sputtering current and reaction gases • Determine whether the plastic or metal materials are suitable for plasma surface treatment • Operate the vacuum ion plating surface treatment machines • Master the entire vacuum ion plating surface treatment technology, self-adjust the technologies parameters, so as to reach the desired effect of plastic products • Compile relevant production guidelines and detailed arrangements in accordance with all kinds of vacuum ion plating surface treatment technologies • Analyse the quality problems of vacuum ion plating surface treatment and carry out improvement • Bring benefits through changing material properties by using vacuum ion plating surface treatment 3. Professional handling of vacuum ion plating surface treatment

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	• Follow safety guidelines and related codes of practice, in accordance with the requirements of technologies and techniques, product specifications and production efficiency, carry out vacuum ion plating surface treatment
Assessment Criteria	The integrated outcome requirements of this unit of competency are: • Capable to operate relevant vacuum ion plating surface treatment technologies and techniques independently • Capable to fine-tune the relevant technologies and techniques in accordance with the workpiece material and product requirements • Capable to solve the general operation problems of the equipment of vacuum ion plating surface treatment, carry out preventive maintenance and continuous improvement
Remark	