

元智大學 103 學年度研究所 碩士班 招生試題卷

系(所)別： 化學工程與材料
科學學系碩士班

組別： 不分組-選考 A

科目： 科技英文

用紙第 / 頁共 / 頁

●不可使用電子計算機

英文翻譯成中文

1. Chemical reaction engineering is primarily a knowledge of chemical kinetics and reactor design that distinguishes the chemical engineer from other engineers. (8%)
2. DNA, the blueprint for life present in every cell, contains the information to make the 3,000-4,000 proteins in a bacterium or the 30,000-40,000 proteins in a human being. (8%)
3. A differential equation is a mathematical equation that relates some function of one or more variables with its derivatives. (8%)
4. The basis of materials science involves relating the desired properties and relative performance of a material in a certain application to the structure of the atoms and phases in that material through characterization. (10%)
5. The electromagnetic spectrum extends from below the low frequencies used for modern radio communication to gamma radiation at the short-wavelength (high-frequency) end, thereby covering wavelengths from thousands of kilometers down to a fraction of the size of an atom. (10%)

中文翻譯成英文

6. 溶解度往往取決於溶質在水中的溶解平衡常數，反映溶質的溶解-沉澱平衡關係。(8%)
7. 光阻(Photoresist)是在積體電路生產過程中把光罩上的圖形轉移到矽晶片或者其他基材上使用的高分子材料。(8%)

英文作文

8. Write an essay in English on **one and only one** of the following topics: (a) Describe what you have learned from thermodynamics, (b) Describe the considerations of the process design of cyclohexane oxidation unit in a petrochemical plant, or (3) Describe the design considerations of a shell and tube heat exchanger. (40%)

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