

★★★ <第27回知的財産翻訳検定試験【第13回英文和訳】> ★★★

≪ 1 級課題 -化学- ≫

【解答にあたっての注意】

1. 問題の指示により和訳してください。
2. 解答語数に特に制限はありません。適切な箇所で行改行してください。
3. 課題文に段落番号がある場合、これを訳文に記載してください。
4. 課題は4題あります。それぞれの課題の指示に従い、4題すべて解答してください。

問1. 以下のクレーム1及び2を和訳してください。

1. A microcapsule suspension formulation including:

(a) a first suspended phase of a plurality of microcapsules having a volume median particle size of from about 1 to about 10 microns, wherein the microcapsules include:

(1) a microcapsule wall produced by an interfacial polycondensation reaction between a polymeric isocyanate and a polyamine to form a polyurea shell;

(2) at least one organic nitrification inhibiting compound encapsulated within the polyurea shell;

(b) a second suspended phase of a plurality of microcapsules having a volume median particle size of from about 1 to about 10 microns, wherein the microcapsules include:

(1) a microcapsule wall produced by an interfacial polycondensation reaction between a polymeric isocyanate and a polyamine to form a second polyurea shell;

(2) at least one hydrophobic crystal inhibitor additive encapsulated within the second polyurea shell; and

(c) an aqueous phase.

2. The microcapsule suspension formulation according to claim 1, wherein the aqueous phase further includes at least one additional ingredient selected from the group consisting of: dispersants, emulsifiers, rheology aids, antifoam agents, biocides, antifreeze agents and mixtures thereof.

問 2. 以下の明細書部分を和訳してください。

Rare earth magnets are responsible for around one quarter of the world's rare earth metal consumption. Sintered NdFeB type magnets are by far the strongest commercially available variety and are used where size and weight are important factors because a much smaller NdFeB magnet can be used in comparison to more traditional magnetic materials, such as ferrite or alnico. As such, rare earth magnets play an integral role in many high end technologies, such as hybrid and electric vehicles, computer hard drives, and high efficiency wind turbines.

During the manufacture of sintered rare earth magnets, up to 30% of the starting alloy is lost to machining waste. This waste, known as magnet "swarf" represents a significant waste stream in terms of value. This material cannot be re-used directly as it is contaminated with cutting fluids and grinding media, as well as being partly oxidized during the machining process.

There is a significant demand for a more efficient and cost effective method to recover rare earth magnets from scrap waste.

問 3. 以下の明細書部分を和訳してください。

Figure 1 discloses a first embodiment, in accordance with the invention, where a dried and already heated cellulose substrate 1, in the form of a paper or paperboard 1, is additionally heated and dried with IR heating from an IR heat box 2. In a separate pressurised tank 3, a liquid fatty acid halide is heated to vaporize the liquid into gas-phase. The gas is thereafter, via a tube 4, transferred to a gas spreading device 5 that sprays the fatty acid halide gas over the first side of the cellulose substrate 1. The second side of the substrate is at the same time in contact with a rotating vacuum cylinder 6, with holes (not shown in figure), that sucks the gas in a predetermined direction through the cellulose substrate 1. Thereby, the cellulose substrate 1 will be hydrophobized through the complete thickness of the substrate. Moreover, the HCl by-product and possibly unreacted palmitoyl chloride (C16) and/or unbound C16 can be removed and collected for handling.

問 4. 以下の実施例部分を和訳してください。

A 50 mL round bottom flask was charged with a stirring bar, (L) phenylalanine with a carboxybenzyl (Cbz) protecting group on the amine ((L)-CbzNH-Phe-OH [(6), 1.0 g, 3.34 mmol, 1 equiv.]), (L)-Tyrosine with tert-butyl protecting groups on the carboxyl group and the phenyl oxygen ((L)-NH<sub>2</sub>-Tyr(-O<sup>t</sup>Bu)-O<sup>t</sup>Bu ·HCl [(7), 1.156 g, 3.51 mmol, 1.05 equiv.]), and HATU (1.334 g, 3.51 mmol, 1.05 equiv.). DMSO (10 mL) was then added to the round bottom flask to give a suspension [suspension I-A]. HATU is 1-[bis(dimethylamino)methylene]-1H-1,2,3-triazolo[4,5-b]pyridinium 3-oxide hexafluorophosphate. DIPEA is N,N-diisopropylethylamine. DMSO is dimethyl sulfoxide. DIPEA (1.454 mL, 8.35 mmol, 2.5 equiv.) was added slowly to suspension I-A at 23 °C, over 5 minutes to form clear solution. The reaction mixture was stirred at 23 °C for 2 h. The progress of the reaction was monitored by LCMS. The reaction mixture was added drop wise to a stirred 60 mL of cold 5% citric acid-1 N NaCl solution (prepared by adding 5.85 g of NaCl to 100 mL of 5% citric acid solution) to give precipitate of crude compound 8 ((CbzNH-(L)Phe-NH-(L)Tyr(-O<sup>t</sup>Bu)-O<sup>t</sup>Bu) ·HCl). The precipitate was filtered and dissolved in EtOAc (75 mL). The EtOAc layer was washed with water (25 mL) followed by brine (25 mL) and dried over anhyd. Na<sub>2</sub>SO<sub>4</sub>.