２００７年度第５回知的財産翻訳検定＜英文和訳＞
【化学分野】

※解答作成前に必ず下記の注意事項に目を通してください。

【解答にあたっての注意事項】
１．問題は 3 題あります。それぞれの問題の指示に従い、3 題すべて解答してください。
２．問１および問３の解答にあたっては図面を参照してください。
　　これらの図は本文上部にある「課題図表の表示・非表示」ボタンをクリックして
　　閲覧できます。

問１．銅精錬（クレーム翻訳）　(出典：USP 4,830,667)
次のクレーム１～７を日本特許明細書の請求項１～７として翻訳しなさい。参考資料として上記出典の一部抜粋を添付しているが、これは翻訳対象ではない。

＜スタート＞
1. A process for removing sulfur from a molten copper mass containing sulfur in an amount up to the sulfur content of Cu2S, up to about 5% nickel the remainder being essentially copper and associated impurities comprising:
(a) contacting said molten copper mass with a gas containing oxygen at a point or points above about the midpoint of depth of said molten copper mass until said molten copper mass contains sufficient oxygen to meet the sulfur specification of the product; while
(b) sparging said molten copper mass with a gas from a point significantly below the midpoint of depth of said molten copper mass; and
(c) continuing sparging with an inert gas after contact between said molten copper mass and the gas containing oxygen ceases.

2. A process as in claim 1 in which contact of said molten copper mass with a gas containing oxygen is by top blowing.

3. A process as in claim 1 wherein said gas containing oxygen is air.

4. A process as in claim 1 wherein said sparging gas in step (b) is an inert gas.

5. A process as in claim 4 wherein said inert gas contains nitrogen.

6. A process as in claim 1 wherein sparging originates at or near the bottom of said molten copper mass.

7. A process as in claim 1 wherein during the latter part of sparging with inert gas the molten copper mass is cooled whereby nickel is exsolved as nickel oxide from said molten copper mass.
＜エンド＞

＊参考部分

The present invention relates to the field of pyrometallurgical production of blister and/or refined copper from sulfide ores, concentrates, and/or secondary sources. More specifically, it relates to the efficient conversion of copper containing significant amounts of sulfur, e.g. up to about 20%, into copper metal having a sulfur content less than about 0.1% or even less than 0.01% and a low content of impurities amenable to oxidation.

EXAMPLE I

Three tonnes of copper assaying 3.1% nickel and 1.2% sulfur were melted using an oxy-fuel burner in a ladle into the bottom of which had been installed a porous ceramic plug. The temperature of the melt was adjusted to 1300.degree. C. Nitrogen was blown through the plug at 40 liters/minute during meltdown and blowing. To effect conversion, air was blown at 10 m.sup.3 /minute through a 3.8 cm diameter schedule 40 pipe suspended 51 cm above the eye in the bath formed by the nitrogen sparging. The fuel consumption rate was adjusted to offset heat losses and maintain a bath temperature of about 1300.degree. C. After 30 minutes of blowing, the bath assayed (wt. %): 0.023 S, 1.24 Ni, 0.67 O. Blowing was resumed for one minute after which nitrogen stirring was continued for 60 minutes while maintaining the temperature at about 1300.degree. C. At the end of this period, the bath assayed (wt. %): 0.008 S, 1.13 Ni, 0.92 O. Then, the burner was turned off; the nitrogen rate was adjusted to 10 liters/minute, and the melt allowed to cool. After 45 minutes, the blister temperature was 1215.degree. C., and it assayed (wt. %): 0.005 S, 0.55 Ni, 1.02 O.

Samples of mush taken at the end of cooling showed that this material contained little copper oxide so that the ratio of copper as oxide to nickel as oxide was well below one. An oxygen efficiency close to 100% was calculated based on the composition of the final bath.

問２．セラミック製造 （出典：USP 6,900,150）

次の米国特許明細書の一部抜粋を日本語に翻訳しなさい。

＜スタート＞

As used herein and in the appended claims, the terms "calcine," "calcining," "calcination" and grammatical variations thereof, refer to a process of heating a particulate substance below its melting point to effect a chemical change in one or more component of the material, such as to drive off carbon dioxide from a metal carbonate to form a metal oxide. Generally, calcining also leads to a reduction in the number of material phases in a mixed-metal oxide composition. For example, a powdered mixture of titanium oxide, barium carbonate and neodymium oxide initially contains three distinct phases, one for each individual compound in the mixture. During calcination carbon dioxide is driven off of metal carbonates such as barium carbonate to form oxides such as barium oxide. In addition, initially separate metal oxide phases such as titanium dioxide, neodymium oxide, samarium oxide, and barium oxide, will typically merge together into one or more complex, mixed-metal oxide phase. The terms "calcinated powder" and "calcinated particulate material" as used herein and in the appended claims refer to a powder or particulate material that has been subjected to a calcination process.

＜エンド＞

問３．有機合成 （出典：USP 7,259,263 、Appl. No.: 11/170,042）

次の米国特許明細書の一部抜粋を日本語に翻訳しなさい。

＜スタート＞

Commercially available N-tritylserine methyl ester (15.0 g, 41.5 mmol) in 350 mL toluene was stirred with triethylamine (16 mL, 115 mmol) until the solids were dissolved. A solution of phosgene (20% w/w in toluene, 25 mL, 47.2 mmol) was then added and the solution was stirred for 2 h. The mixture was then poured into 100 mL 1N HCl, and the layers separated. To the aqueous layer was then added 40 mL 3N NaOH, which was then extracted twice with 100 mL 1:1 toluene:dichloromethane. The combined organic layers were then washed once with 100 mL 1N HCl, twice with 100 mL 1N NaOH, and once with 100 mL brine. The solution was dried over sodium sulfate then passed through a pad of silica gel (0.5", 500 mL sintered glass funnel). The silica was washed with 250 mL ethyl acetate and concentrated under vacuum to afford a crude foam (16.5 g, >100%).

＜エンド＞