

(12) 特許協力条約に基づいて公開された国際出願

(19) 世界知的所有権機関  
国際事務局



(43) 国際公開日  
2011年7月28日(28.07.2011)

PCT

(10) 国際公開番号  
WO 2011/090044 A1

- (51) 国際特許分類:  
H01M 4/66 (2006.01) C25D 7/06 (2006.01)  
C25D 5/10 (2006.01) C25D 9/08 (2006.01)
- (21) 国際出願番号: PCT/JP2011/050812
- (22) 国際出願日: 2011年1月19日(19.01.2011)
- (25) 国際出願の言語: 日本語
- (26) 国際公開の言語: 日本語
- (30) 優先権データ:  
特願 2010-012826 2010年1月25日(25.01.2010) JP
- (71) 出願人(米国を除く全ての指定国について): J  
X 日鉱日石金属株式会社(JX Nippon Mining &  
Metals Corporation) [JP/JP]; 〒1008164 東京都千代  
田区大手町二丁目6番3号 Tokyo (JP).
- (72) 発明者; および
- (75) 発明者/出願人(米国についてのみ): 新井 英太  
(ARAI Hideta) [JP/JP]; 〒3170056 茨城県日立市白  
銀町3丁目3番1号 J X 日鉱日石金属株式  
会社 白銀工場内 Ibaraki (JP). 神永 賢吾  
(KAMINAGA Kengo) [JP/JP]; 〒3170056 茨城県日  
立市白銀町3丁目3番1号 J X 日鉱日石金  
属株式会社 白銀工場内 Ibaraki (JP). 三木 敦

史(MIKI Atsushi) [JP/JP]; 〒3170056 茨城県日立市  
白銀町3丁目3番1号 J X 日鉱日石金属株  
式会社 白銀工場内 Ibaraki (JP). 岩崎 友一  
(IWASAKI Yuichi) [JP/JP]; 〒3170056 茨城県日立  
市白銀町3丁目3番1号 J X 日鉱日石金属  
株式会社 白銀工場内 Ibaraki (JP).

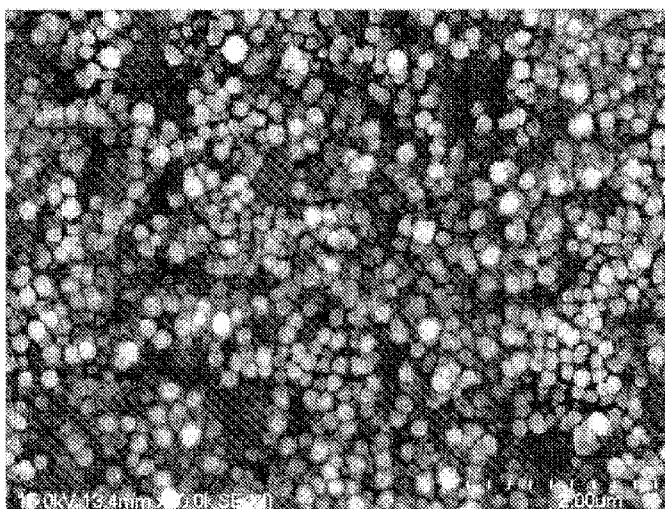
- (74) 代理人: 小越 勇(OGOSHI Isamu); 〒1050001 東  
京都港区虎ノ門3丁目1番10号 第2虎ノ  
門電気ビル5階 小越国際特許事務所 Tokyo  
(JP).
- (81) 指定国(表示のない限り、全ての種類の国内保  
護が可能): AE, AG, AL, AM, AO, AT, AU, AZ, BA,  
BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO,  
CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI,  
GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS,  
JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR,  
LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW,  
MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH,  
PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST,  
SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ,  
VC, VN, ZA, ZM, ZW.
- (84) 指定国(表示のない限り、全ての種類の広域保  
護が可能): ARIPO (BW, GH, GM, KE, LR, LS, MW,

[続葉有]

(54) Title: COPPER FOIL FOR SECONDARY BATTERY NEGATIVE ELECTRODE POWER COLLECTOR

(54) 発明の名称: 二次電池負極集電体用銅箔

【図1】



(57) Abstract: Provided is a copper foil for a secondary battery negative electrode power collector, which is obtained by performing a roughing process on both of the front and back surfaces of a rolled copper alloy foil. The copper foil is characterized in that, in the case where an average surface roughness Ra of the front and back surfaces which is measured by a laser microscope is 0.04 to 0.20 μm, and a calculation value (C) is obtained from  $(A)/(B) = (C)$  in which (A) represents a three-dimensional surface area that is obtained by measuring the surface of the roughed surface by the laser microscope, and (B) represents a two-dimensional area, which is a projection area at the time of the measurement of the three-dimensional surface area, and in the case where a calculation value (C') is obtained from  $(A')/(B') = (C')$  in which (A') represents a three-dimensional surface area that is obtained by measuring the surface of a rolled copper foil and a copper alloy foil which are not subjected to the roughing process by the laser microscope, and (B') represents a two-dimensional area, which is a projection area at the time of the

measurement of the three-dimensional surface area,  $1.0 < (C)/(C') < 1.1$  is satisfied. The copper foil for a secondary battery negative electrode power collector is excellent in adhesion of secondary battery active materials, is capable of reducing the variation of weight thicknesses of the secondary battery active materials, and is also excellent in weather resistance and heat resistance.

(57) 要約:

[続葉有]