

# 超微細回路形成

## Ultra-fine Pattern Formation and Final Surface Treatment

**SAP** 絶縁樹脂 : ABF材  
Dielectric layer ABF substrate

**MSAP** 極薄銅箔JXUT-Ⅲ 1.5 $\mu$ m厚【JX金属(株)製】  
Ultra thin copper foil JXUT-III 1.5  $\mu$  m thickness  
(made by JX Nippon Mining & Metals Corporation)

### デスマア・無電解銅めっき De-smear / Electroless Copper Plating

#### OPC FLETプロセス

- 接続信頼性に優れる
- 低膜厚でも膜厚の均一性に優れる
- 低粗度基板で高いピール強度が得られる
- 低膜厚でも低いシート抵抗値を示す

##### OPC FLET PROCESS

- Excellent in connecting reliability
- Excellent in uniformity of deposition by thin thickness
- High peel strength to low Ra material
- Low sheet resistance can be realized by thin thickness

#### NACEプロセス

- ナノ銀触媒を用いた無電解銅めっきプロセス
- 触媒残渣除去性に優れる
- パターン外析出が少ない
- 優れためっき析出性、接続信頼性を示す

##### NACE PROCESS

- Electroless copper plating process using nano silver catalyst
- Excellent in catalyst residue removing performance
- Strongly reduce deposition outside patterns
- Excellent in deposition ability and connecting reliability

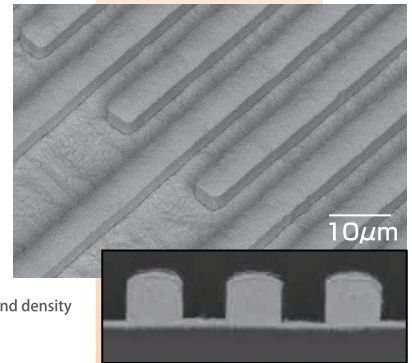
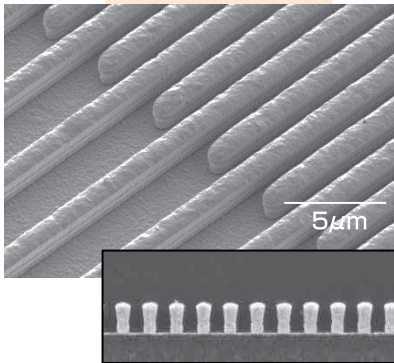
### 硫酸銅めっき Acid Copper Plating

#### 超微細配線用添加剤(開発品)

- パターン大小、疎密によるめっき膜厚の均一性に優れる
- ビアフィリング性に優れる
- 熱衝撃性に優れた高展延性の光沢皮膜が得られる
- 緻密で平滑な光沢外観が得られる

Additives for ultra-fine pattern forming (Under development)

- Can improve thickness uniformity regardless of pattern size and density
- Can show great via-filling performance
- Give high ductility, excellent in thermal shock resistance
- Fine, smooth, bright appearances can be obtained



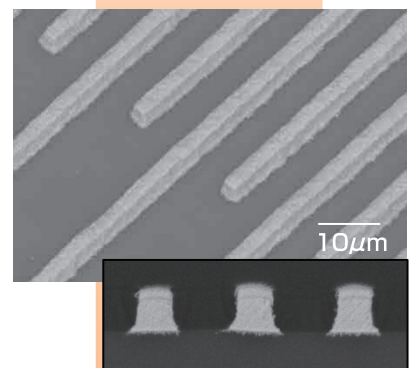
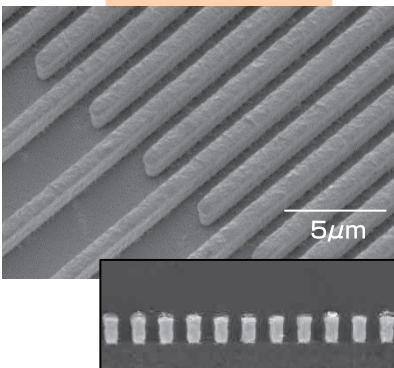
### フラッシュエッチング Flash Etching

#### SAP用シード層エッチング液 (開発品)

Seed layer etching solution for SAP (Under development)

#### MSAP用シード層エッチング液 (開発品)

Seed layer etching solution for MSAP (Under development)



**L/S=1/1 $\mu$ m達成**  
L/S=1/1 $\mu$ m can be realized

**L/S=5/5 $\mu$ m達成**  
L/S=5/5 $\mu$ m can be realized