

Thin-Film Photovoltaic 薄膜光伏材料

Pioneer Materials, Inc. (PMI) has expertise in controlling purity and composition for difficult to manufacture compounds:

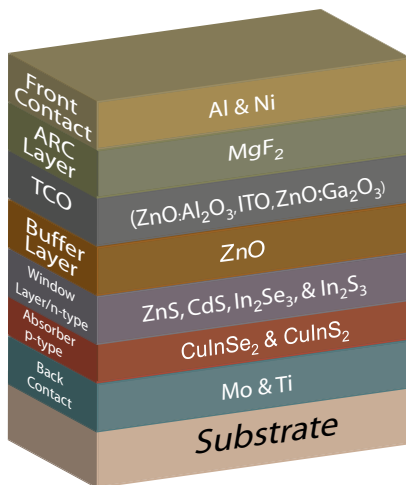
- proprietary compound formation
- powder processing
- material consolidation/densification
- machining/bonding

先锋材料有限公司 (PMI) 在控制化合物的纯度和成分上有着关键性的独特技术

- 独特的的化合物形成技术
- 粉末处理
- 材料烧结/压实
- 机械加工/焊接



CIGS/CIS 铜铟镓硒

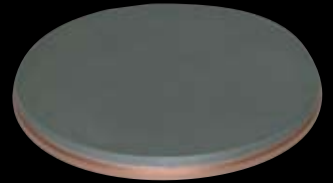


Compounds

- | | |
|--|--------------------------------------|
| Cu(In,Ga)Se ₂ | Cu(In,Ga)S ₂ |
| Cu ₂ Se | Cu ₂ S |
| In ₂ Se ₃ | (In,Ga) ₂ Se ₃ |
| Ga ₂ Se ₃ | CuGa |
| In ₂ S ₃ | CuInGa |
| ZnO | Cu(Zn,Sn)S ₂ |
| ZnS | NaF |
| ZnO:Al ₂ O ₃ | In |
| In ₂ O ₃ :SnO ₂ | |
| CdTe | |
| CdS | |
| W-Ti | |
| Mo | |

Composition	ICP-OES
Purity	99.99% & 99.999%
Density	97%+
Size	Up to 300mm OD or 1,600mm x 150mm
Tolerance	Diameter +/-0.25mm Thickness +/-0.13mm
Surface Finish	32 RMS (micro-in)

PMI Materials



PMI Chengdu Fab I



Expanded 41,000 sq. ft facility

占地41,000平方英尺, 3,850平方米,
年产量可达40,000片靶材