



High Performance Metal Solutions

高性能DynaMo™ 溅射靶材系列



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DynaMo™ 溅射靶材料性能

H.C. Starck Solutions 提供业内密度最高的平轧平面溅射靶材。

DynaMo™ 可被用于移动平面显示和车载显示领域的阻隔层和覆盖层

DynaMo™ 机械性能

密度（克/立方厘米）	10
拉伸	
降伏强度	380 (55)
极限拉伸强度	560 (81)
断裂时百分比	2
硬度	200
热膨胀系数	TBD
电导率	
热导	210-250
电导	6.4

典型微观结构



纵向



横向

为什么要使世泰科的 DynaMo™?

DynaMo™ 在蚀刻和抗腐蚀方面性能卓越.

> 蚀刻通用特性

- DynaMo™ 相较于市场上其他钼合金，在PAN中蚀刻速率最接近铝
- DynaMo™ 在铜蚀刻液中易被蚀刻，轮廓整齐，锥角可控

> 抗腐蚀性能

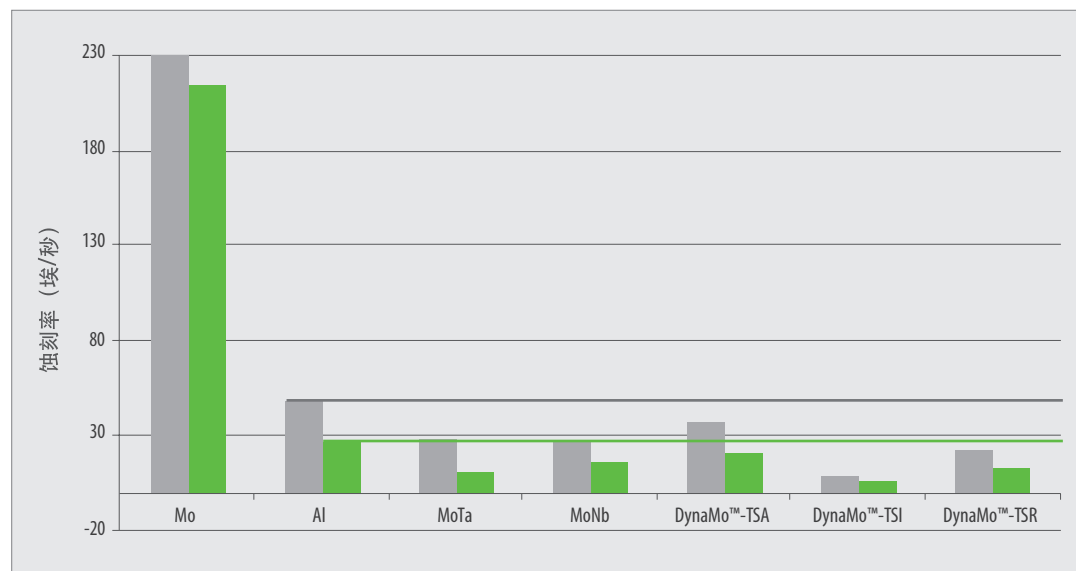
- DynaMo™ 与钼铌或钼钽合金相比其抗腐蚀性有40-80%的提高

> 黑色材料

- DynaMo-Ox™ 拥有低于15%的反射率
- DynaMo-Ox™ 的蚀刻性能与铝相兼容

DynaMo™ 是“最好的”蚀刻解决方案

在PAN蚀刻液中蚀刻速率



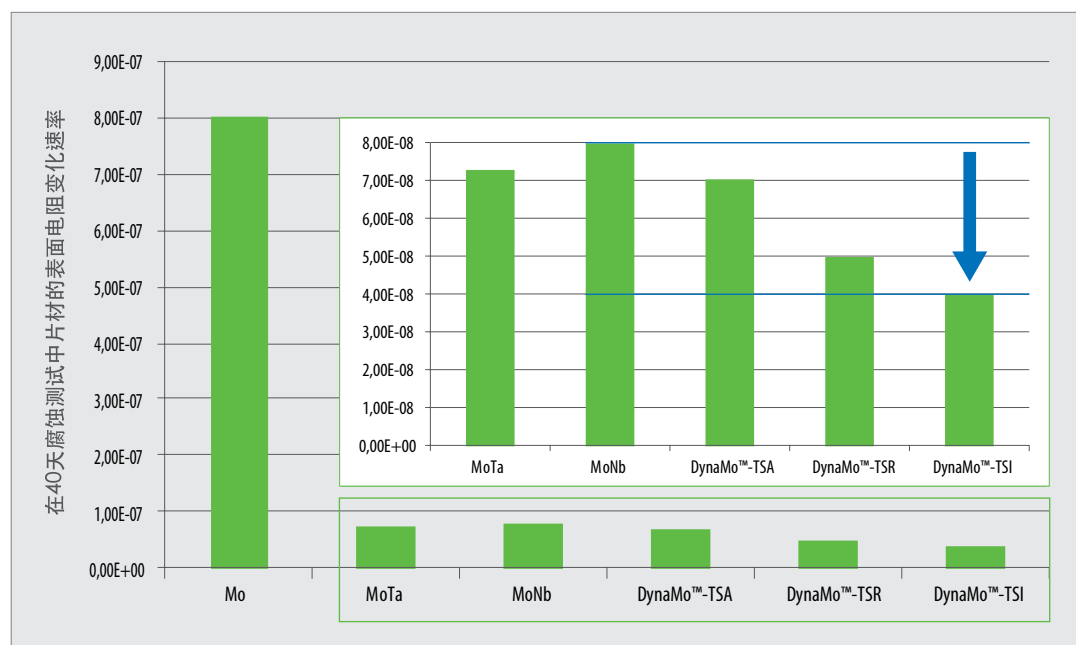
■ 温度 = 36 摄氏度
■ 温度 = 42 摄氏度

在任何既定温度下
DynaMo-TSA™在PAN中的
蚀刻速率均最接近铝.

DynaMo™ 抗腐蚀性能

在85摄氏度 85%湿度环境下与钼合金对比的腐蚀速率

玻璃 (100 纳米钼合金)



DynaMo-TSI™ 和
DynaMo-TSR™是为触控及
车载显示而量身定制的。
比钼铌和钼钽的抗腐蚀性
能有 40-80% 的改善.

黑色 DynaMo™ (抗反射涂层)

利用 DynaMo™ 系列靶材产生的黑色氧化物在 550 纳米波长的反射率小于 10-15%

H.C. Starck Solutions 的解决方案可以根据客户的具体要求和能力为每个客户定制.

解决方案 1 – 通过改变晶粒尺寸和表面形态降低反射率.

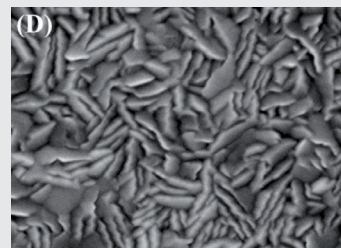
优势:

- > 不需换溅射靶材
- > 不需在溅射过程中用反应气体
- > 蚀刻率无大改变
- > 不需后期高温处理

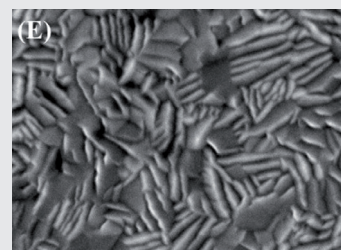
劣势:

- > 在 550 纳米, 根据沉积参数反射率约为 40-60%.

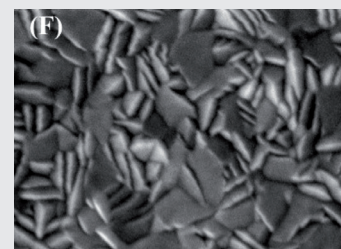
世泰科的解决方案包括一个非常独特的 DynaMo™ 成分来改变晶粒尺寸与堆积密度, 从而达到反射率 < 25-35%.



100 纳米



100 纳米

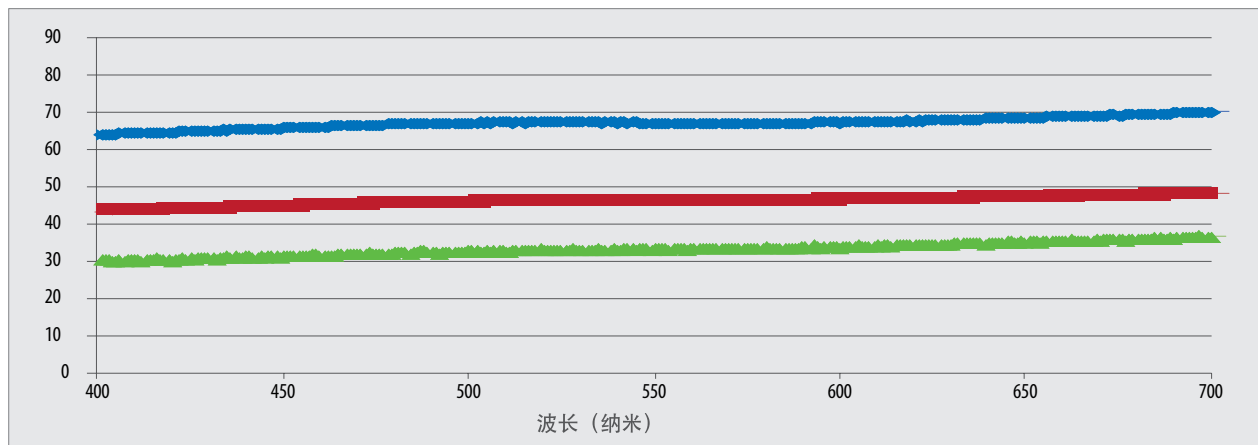


100 纳米

高氩气气压有助晶粒生长.

增加氩气气压

氩气气压



解决方案 2 – 通过反应溅射降低反射率

优势:

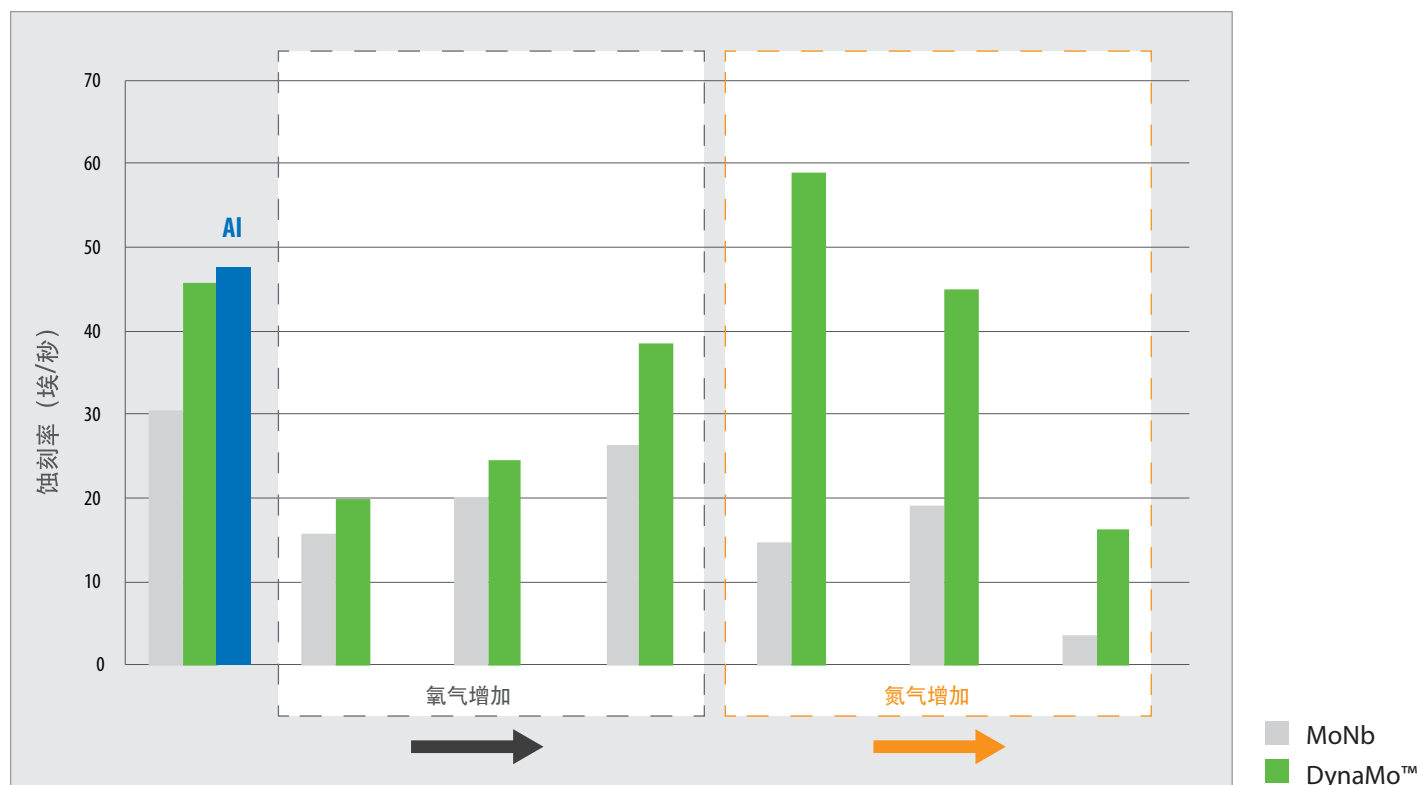
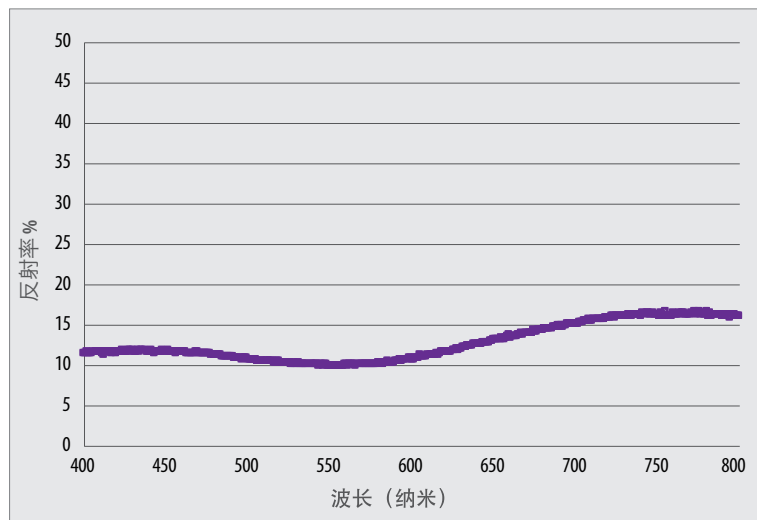
- > 在 550 纳米波长，反射率 < 10-15%
- > 无需换靶材

劣势:

- > 溅射过程中使用反应气体

世泰科专利待批DynaMo™化合成分及其氧化物系列与蚀刻液（例如PAN）反应兼容从而蚀刻率不会受金属或氧化物形态的显著影响。

玻璃 (200纳米DynaMo-Ox™和 50 纳米 DynaMo-Nx™)



解决方案 3 – 后期在 350 摄氏度空气中退火

优势:

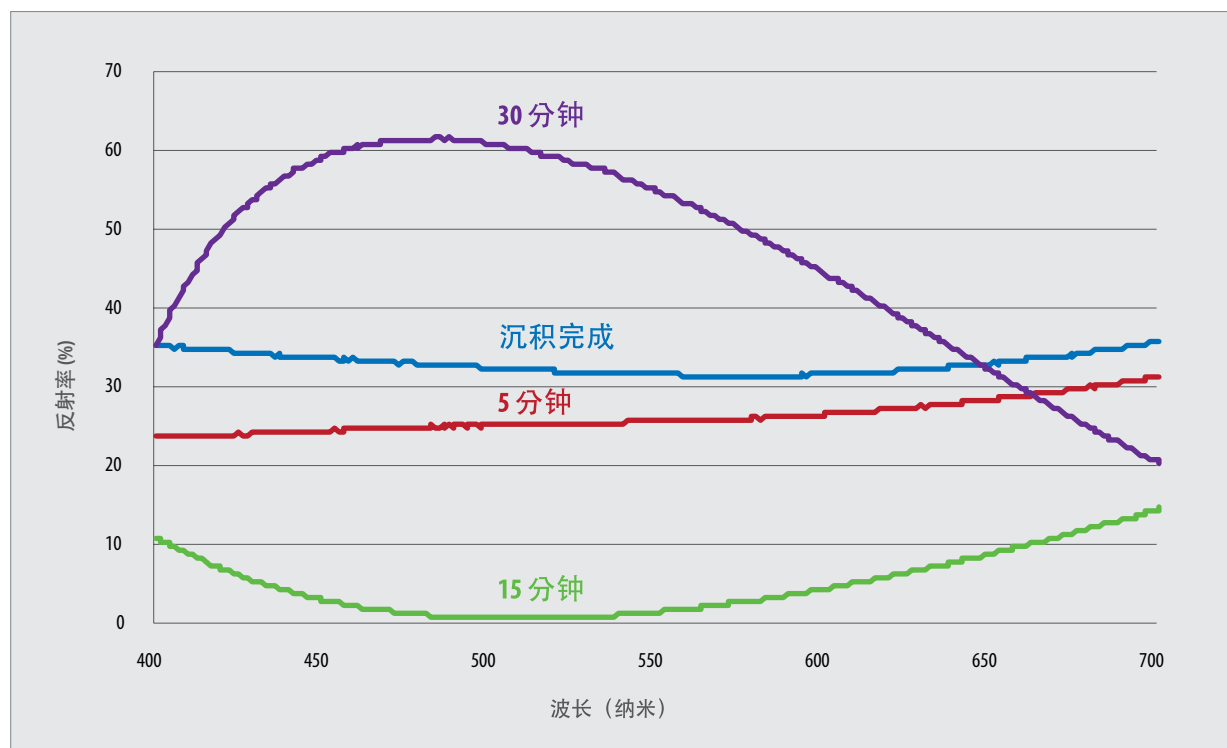
- > 在 550 纳米波长，反射率 < 0-10%
- > 不需更换溅射靶材
- > 溅射过程中不需使用反应气体
- > 仅最表面材料被改变，薄膜蚀刻率不受大影响

劣势:

- > 后期高温退火

世泰科的解决方案包括 350 摄氏度的退火过程，与平板显示-触控面板生产步骤中的固化相似。

玻璃 (30 纳米钼合金，3000 纳米铝和 30 纳米钼合金)



解决方案 4 – 通过表面改性降低反射率：阳极氧化

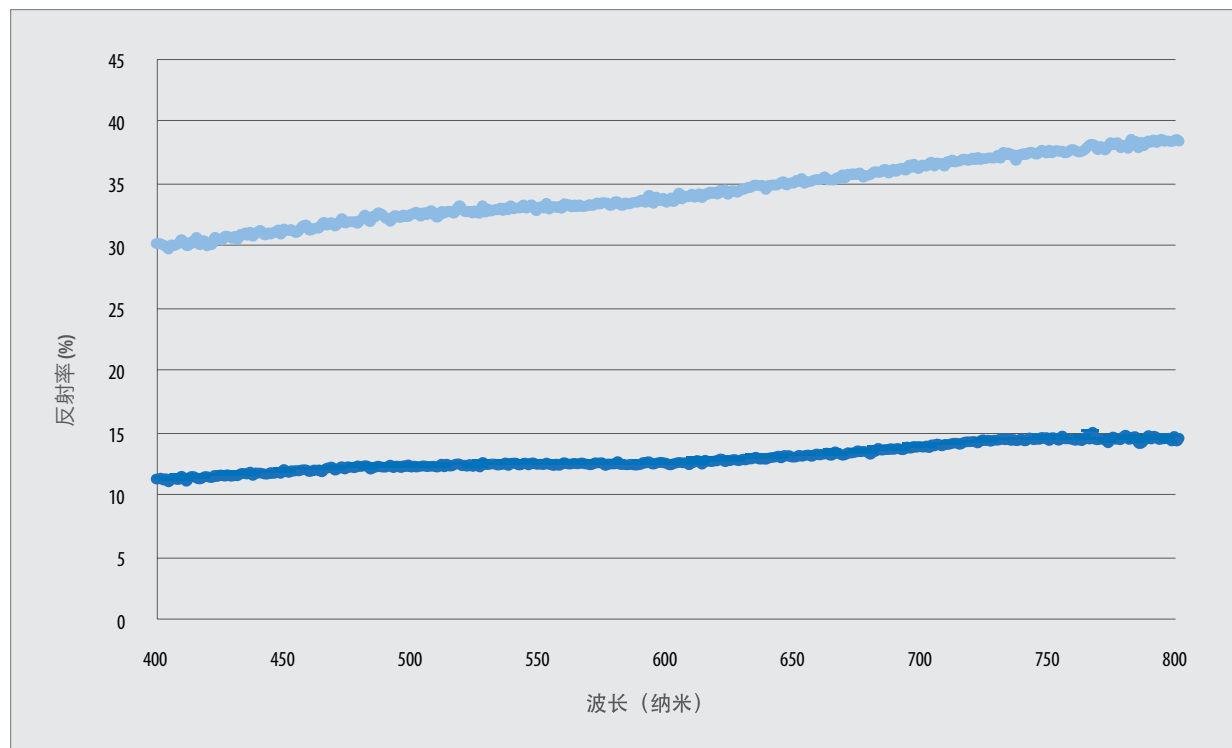
优势:

- > 在 550 纳米波长，反射率< 10-15%
- > 不需更换溅射靶材
- > 溅射过程中不需使用反应气体
- > 仅最表面材料被改变，
薄膜蚀刻率不受大影响
- > 后期工序在室温进行

劣势:

- > 只有某些材料/成分会在阳极氧化过程中反应

DynaMo™ 在低浓度酸 / 碱性溶液中易被阳极氧化.



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