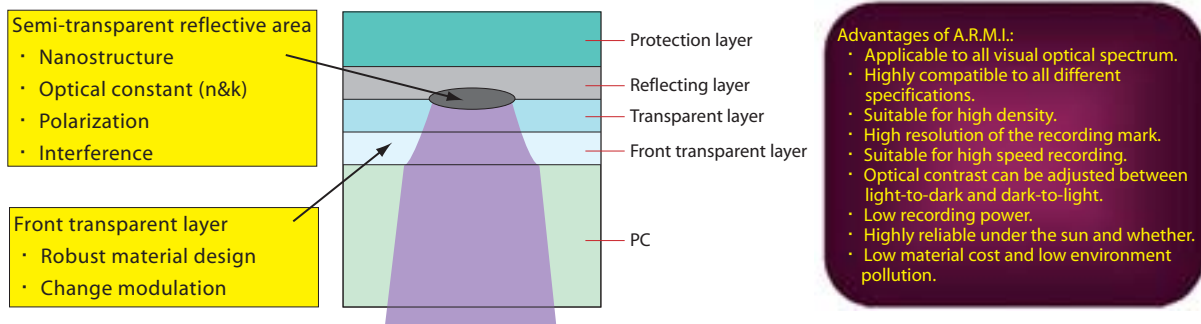


## Advanced Recordable Media - Inorganic (A.R.M.I.) 可錄式光記錄媒體無機材料

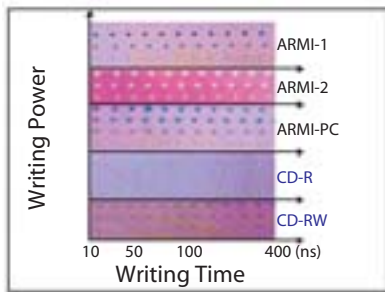
A series of inorganic materials, categorically called A.R.M.I. (Advanced Recordable Media-Inorganic) are developed for write-once recording. A.R.M.I. uses a light beam to heat the designed two-film structure, i.e., a transparent layer and a reflecting layer, inducing a structural change and forming a semi-transparent reflective area. The accompanied changes in the optical constants of the materials, the polarization angle, and the interference pattern cause a change of luminosity, which is the basis of the recording mechanism.

The patented A.R.M.I. materials and processes are low-cost and applicable over a wide range of wavelength. Additional features like low power and high-speed writing with a small spot size make A.R.M.I. a most desirable recording media. ITRI is working with industrial partners to seek early certification for use in high-speed DVD+RW systems.

運用奈米技術已開發出一系列可錄式光記錄媒體無機材料，簡稱為A.R.M.I. (Advanced Recordable Media - Inorganic)，其基本機制為利用雷射光加熱基本雙膜層設計（透明層與反射層），形成一半透明反射區，改變原先膜層材料的光學常數以及偏極光角度，使原先的干涉效應產生偏移作用，造成寫入前與寫入後的亮度差別，達到光記錄的效果。此專利材料技術，可降低生產成本，更由於掌握材料的自主性，將為國內產業提供寬廣的空間，促進產業升級。鑑於A.R.M.I.專利技術可帶來之優勢，國內廠商於2000年8月與工研院材料所簽定合作開發計畫，並已驗證此技術之實用性，目前正致力於通過高倍數DVD+RW的認證。

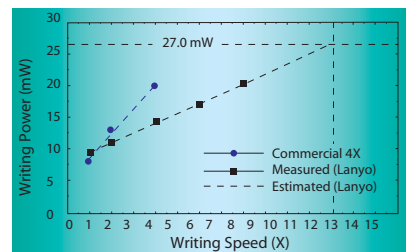


### Static Test



2000/06

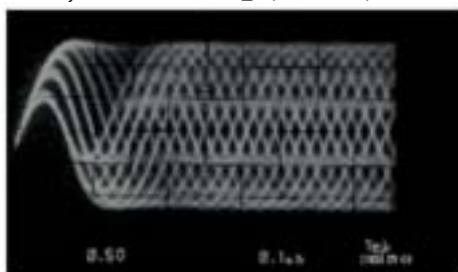
### High Speed Writing Recordable DVD using "ARMI"



Consistent with high speed writing 2003/01 potential (high writing speed with low writing power).

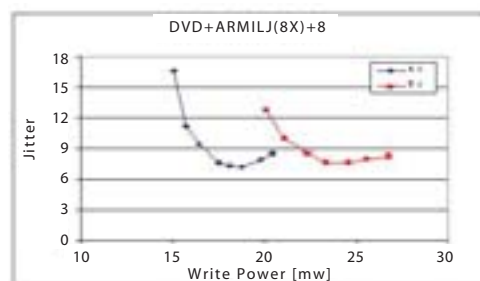
### Dynamic Test

Eye Pattern of ARMI\_1 (4X DVD-R)



Jitter of EFM data is low (the jitter values are around 7%) 2003/01

### Jitter of EFM



Power margin is large, multi-track data written at 4x and 8x speed as function of write power. 2003/07