

FASTLAB調製F-18 FDG

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林口長庚迴旋加速器中心概況

- SUMITOMO HM-12
 - F100D – NaF、Gatoc、Ga-PSMA、FDG
 - F121R – AV45、AV133
 - U101R – ¹¹C-Acetate、¹¹C-Choline
 - F300E – FDG
- GE PETtrace 800
 - FastLAB – FDG
 - TracerLAB x2 – AV45、THK5351、MNI958

FASTLAB & CASSETTE

FASTlab FDG Cassette:

phosphate buffer formulation

FASTlab FDG Cassette:

citrate buffer formulation

FASTlab NaF Cassette

FASTlab FMISO Cassette

FASTlab FLT Cassette



FASTLAB FDG調製情況

- 總調製次數： 707次(統計至3/8/2018)
- 調製失敗次數： 19次
- 產率低於警戒值次數： 23次
- 稼動率： 94%

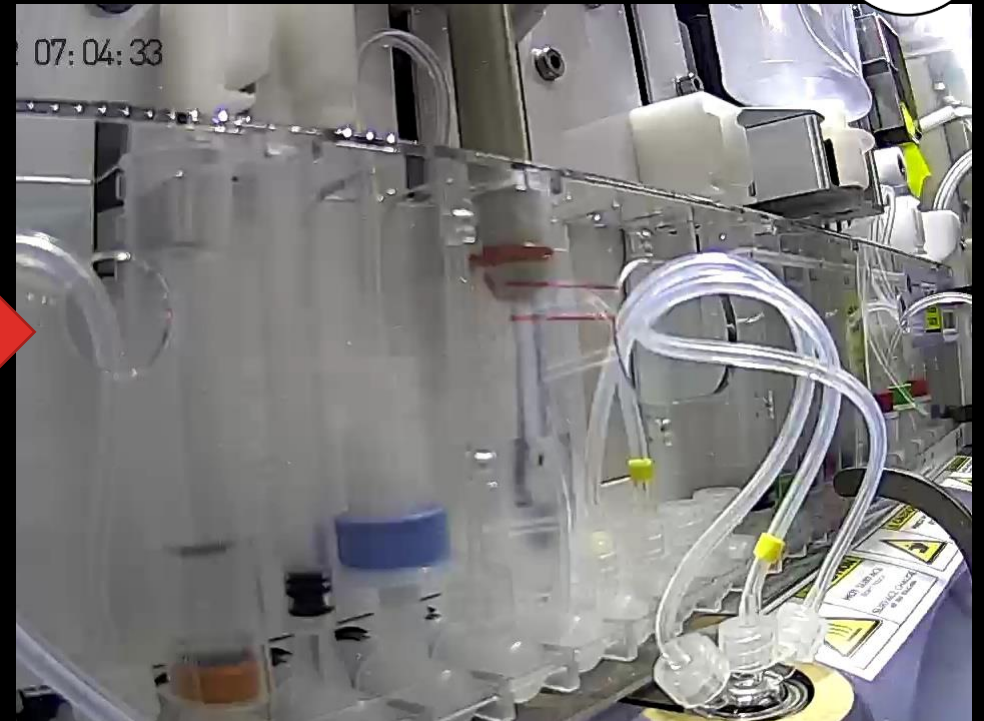
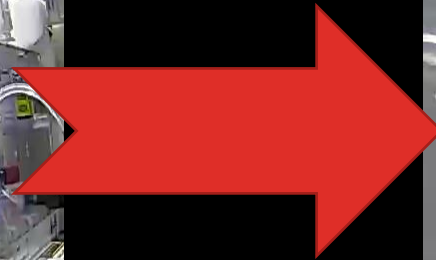
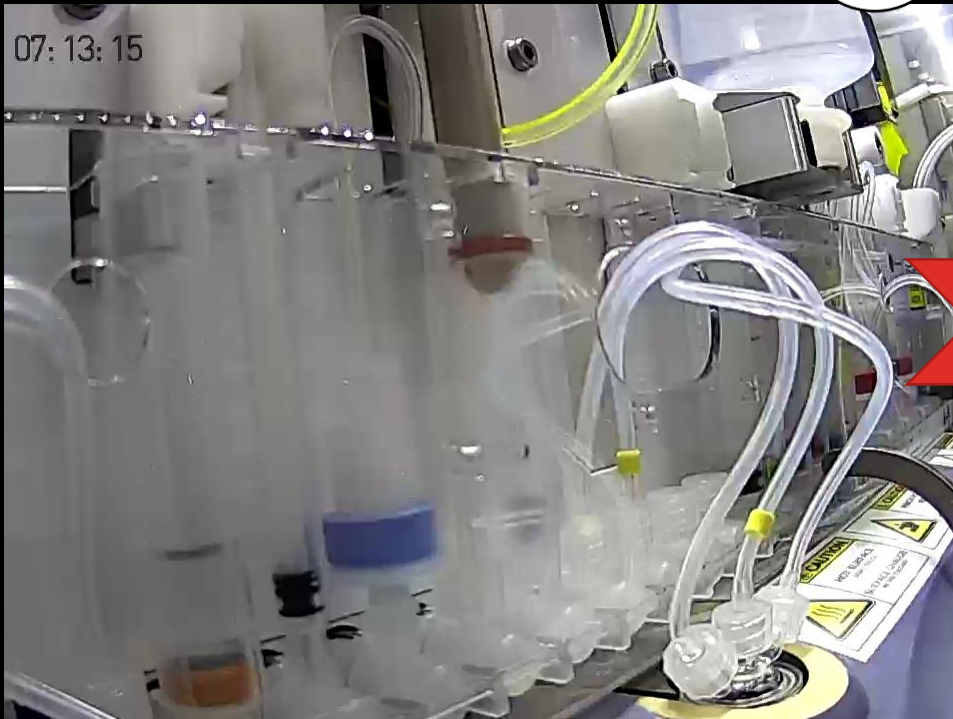
- 平均產率： 62.3%

FASTLAB FDG調 製經驗分享

- V_Vail 液體量監控
- 最常損壞的元件
- Cassette 良率
- 製程狀況判斷
- 產物濃度不均

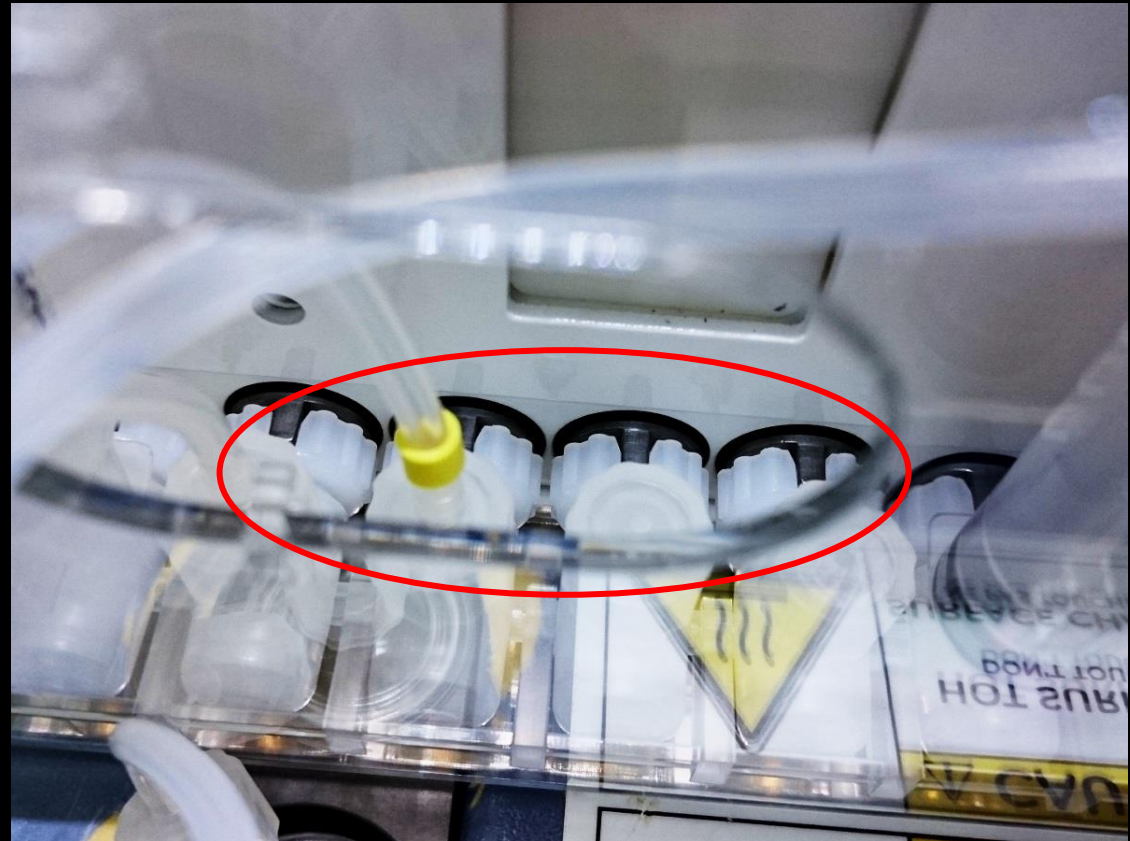
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- V_Vial液體量？



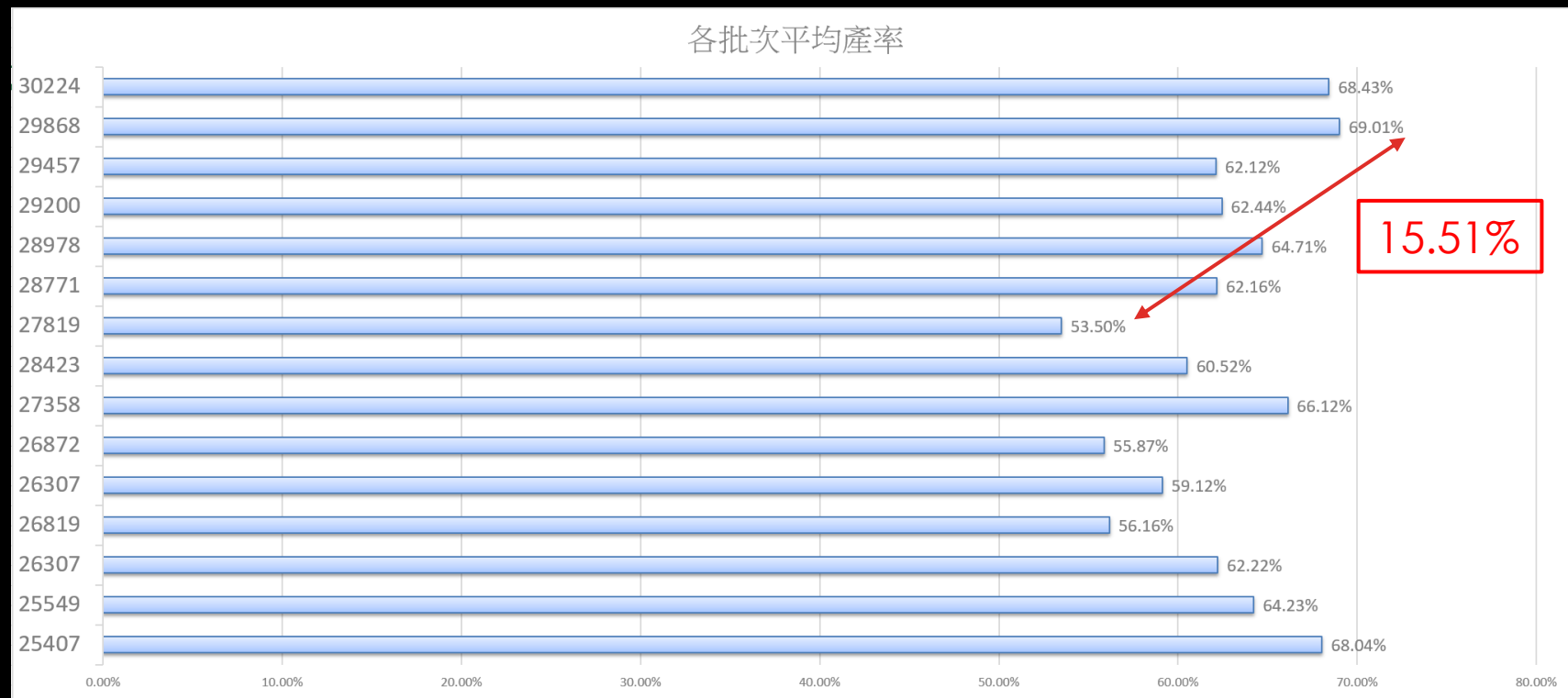
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- 最常損壞的元件？
 - Control Valve → 7次
 - 被影響批次 → 13次
 - 回收管線脫落或斷裂 → 3次
 - 被影響批次 → 1次



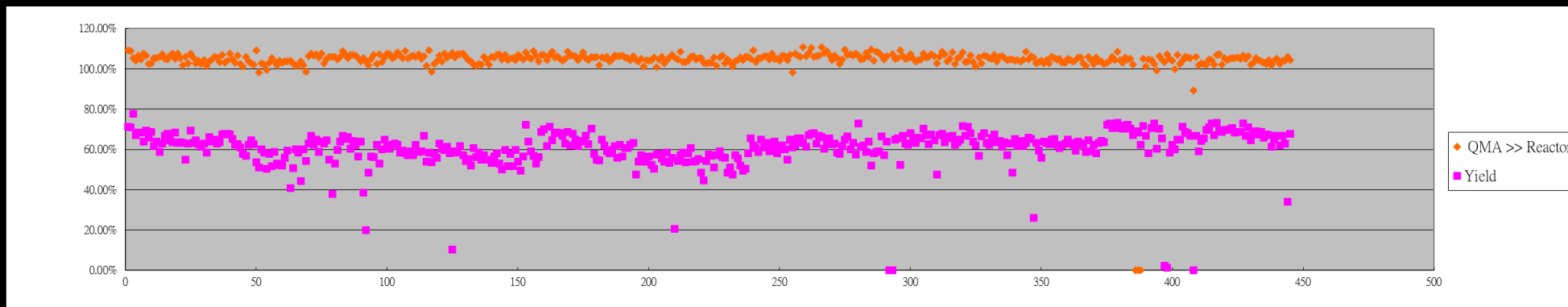
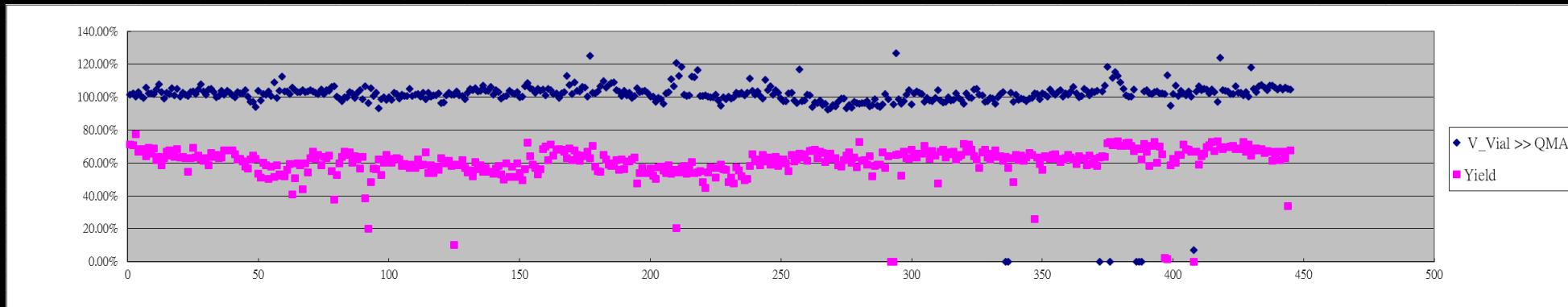
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- Cassette批次良率？



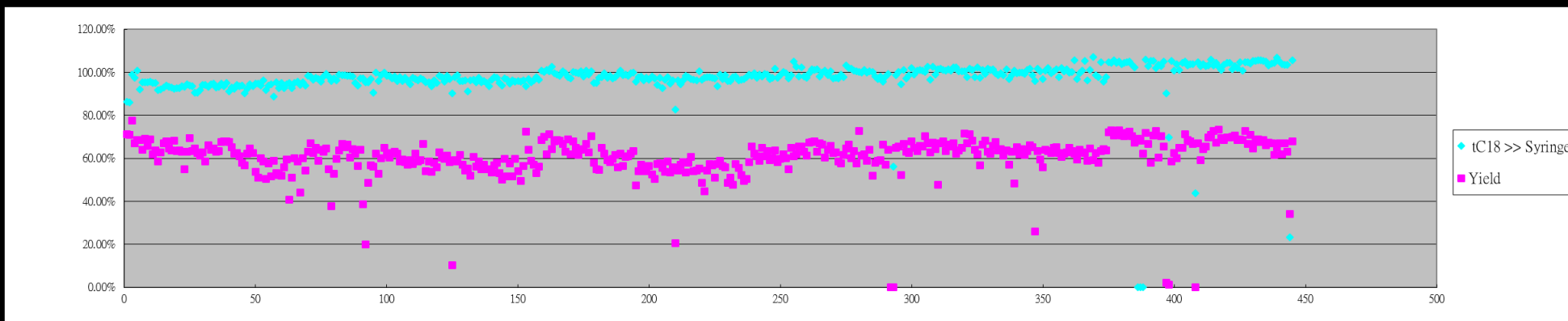
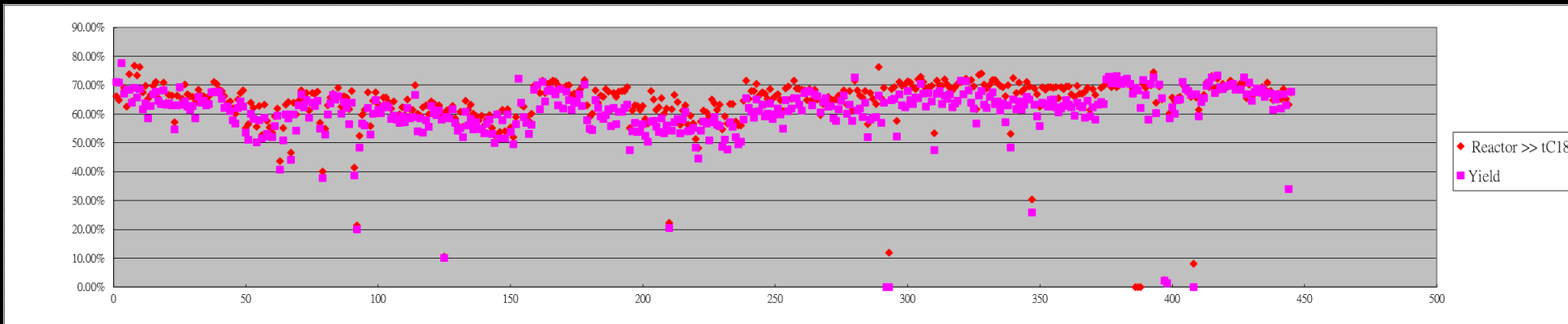
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- 製程狀況判斷



FASTLAB FDG調製經驗分享

- 製程狀況判斷



FASTLAB FDG調製經驗分享

- 產物濃度不均勻？

- 例1：5356mCi 19.6mL → 273.27mCi/mL

*=衰減校正

- 分裝1 → 1mL 347mCi → 353.6mCi/mL*

- 分裝2 → 0.7mL 243mCi → 365.1mCi/mL*

- 分裝3 → 4.5mL 1270mCi → 302.5mCi/mL*

- 分裝4 → 13.1mL 2940mCi → 254.6mCi/mL*

- 例2：5555mCi 19.9mL → 279.15mCi/mL

- 分裝1 → 1mL 296mCi → 297.9mCi/mL*

- 分裝2 → 1mL 251mCi → 260.7mCi/mL*

- 分裝3 → 4mL 1030mCi → 274.3mCi/mL*

- 分裝4 → 13.3mL 3190mCi → 272.1mCi/mL*

FASTLAB 優缺個人見解

- 優點
 - 人員培訓相對容易
 - 對操作人員的合成壓力較輕
 - 合成準備迅速簡便
 - 產率相對較高
- 缺點
 - 設備妥善率稍低
 - 程序無法檢測Valve故障
 - Cassette批次良率不穩定
 - 產品需要再Remix



感謝各位先進的指導

