

# 行政院國家科學委員會專題研究計畫 成果報告

計畫類別：個別型計畫

計畫編號：NSC92-2731-M-038-001-

執行期間：92年01月01日至92年12月31日

執行單位：臺北醫學大學

計畫主持人：黃豪銘

計畫參與人員：王淑慧

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行政院國家科學委員會專題研究計畫成果報告

臺北醫學大學貴重儀器共同使用計劃

九十二年度工作報告

計畫編號：NSC91-2731-P038-001

執行期間：92年1月1日至92年12月31日

計畫主持人：黃豪銘 主任

執行單位：台北醫學大學  
中華民國九十三年三月

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## 一、略述本年度工作內容及重點

本中心之 500 MHz NMR 以“臺北醫學大學貴重儀器共同使用”計劃，於 88 學年度(88 年 8 月 1 日)正式對外開放服務，至今持續獲得國科會之肯定，繼續執行該計劃。

92 年度，為了加強推廣校外之使用，於 92 年 2 月修正收費標準 參考附表一，於 8 月份突破 3000 小時之使用量。為了推廣三維及四維實驗之應用於生物科技，本中心於 92 年 4 月 25、26 日於本校舉辦《核磁共振儀在生物醫學之應用研討會》，雖適逢 SARS 風暴，但仍有百餘人參加。另外，為了讓使用者方便儲存資料，於 92 年 6 月向國科會提出經費異動申請，將老舊之 SGI INDY computer system，升級為 PC computer system；此案於 92 年 10 月核准，於 12 月升級完成。另外，為了平衡市場，於 92 年 10 月將收費標準調升 參考附表二。

概括 92 年之工作內容有：

1. 接受校內、外的送測服務(總計服務約 4000 小時,收費達 216.8 萬元) 服務行政處理及統計資料彙整等。
2. 舉辦校內教師操作訓練，增加夜間開放(自行操作)之業務。
3. 92 年 1 月 27 日舉辦“ The Orientation for NMR Users of 500 MHz NMR ”，針對送測的使用者，說明本校 500 MHz NMR 之儀器介紹、如何上線預約、送測注意事項、資料存取方法等。並加強 XWIN-NMR 之軟體使用教學，未來期許達到無紙化列印。
4. 92 年 2 月 1 日降低收費 參考附表一，並實施。
5. 92 年 4 月 26、27 日舉辦全國性“ The Biotechnological Applications of

Nuclear Magnetic Resonance ” 研討會，除了應用之介紹外，亦增加校內外各研究經驗交流與分享。

6. 定期保養儀器，使之保持最佳性能。
7. 資料之備份與儲存。
8. 92 年 10 月調升收費 參考附表二 ，並實施。
9. 92 年 12 月，完成執行 PC computer 升級及相關配合之軟硬體升級執行。

## 二、儀器運作狀況及服務成果

### 1. 運作狀況：

本儀器設備於 85 年 12 月裝機，86 年 1 月驗收，86 年 3 月正式啟用，屬於臺北醫學大學共同儀器中心所管轄，設有一 NMR 諮詢委員會，成員有許元勳召集委員、徐鳳麟委員、林淑娟委員、李美賢委員及黃聲東委員等。NMR 室所制定之規定及收費標準皆由諮詢委員會會議建議，且諮詢委員會為本儀器之諮詢中心，除監督 NMR 室之運作，以提升服務品質外，並有應用諮詢之功能。

NMR 室聘有講師級資深操作員王淑慧老師，專責操作儀器暨維護事宜。運作上有“台北醫學大學 DRX-500 核磁共振儀校內使用管理規則”、“台北醫學大學 DRX-500 核磁共振儀校外使用管理規則”及“DRX-500 核磁共振儀使用申請表”等規範，故不論校內外樣品，皆可順利進行。

92 年度運作概況：多年的運作使得我們有充裕的人力及經驗支援。本儀器於 92 年期間之運作正常，且將儀器之運作充分發揮，每月平均校內約 27 件、約 78 小時；校外約 87 件、254 小時；校外使用量已超過總使用量的 75%，服務之實驗室約 30 個，校外之實驗室比例超過 50%；目前本儀器的使用量已充分發揮。為了增加服務國科會貴重儀器之使用者，本中心以 CD 片之資料備份服務修正為免費，本中心的資料可備存一年份。

當本儀器發生狀況時，本中心備有應變小組，其成員除有本中心之黃豪銘主任、王淑慧講師、陳蕙敏技士及許元勳教授外，另有事務組張智庸先生；在維護廠商方面則有原廠吳順家先生、張國棟先生、李明遠先生及何唐銓先生等工程師為應變小組的工程專員，以應緊急狀況支援。

於 92 年期間，因電腦系統出現硬碟磁軌壞損而導致系統當機，經磊威工

程師協助下，現已修復完成，運作正常。

於 92 年 6 月提出『電腦軟硬體升級』之追加預算案，誠感謝國科會自然處於 92 年 10 月核撥 38 萬元，另配合本校核撥 18 萬元，使本校 500 MHz NMR 之電腦軟硬體得以順利升級，並於 92 年 12 月完成裝機驗收。目前之性能狀況與靈敏度均非常良好！

## 2. 服務成果：

	校內	校外	總計
件數	319	1042	1361
時數(小時)	933.5	3045	3978.5
收費(元)	69897	2098085	2167982

註：詳細請參考 92 年度儀器服務明細表

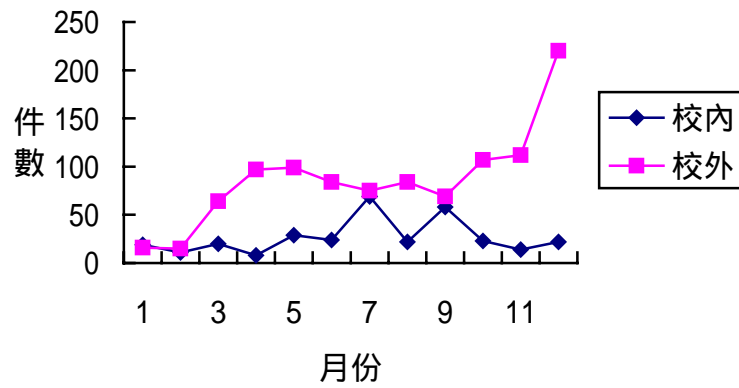
### 三、92 年度儀器服務明細表

月份	使用人次	校內使用 時數	校內使用 件數	國科會使用 時數	國科會使用 件數	校內收費	國科會收費
1	35	53	19	79	16	2213	74320
2	26	49.5	11	64.5	15	1777	35550
3	84	173	20	286.5	64	8517	183300
4	105	28	8	227	97	1166	150390
5	138	143	29	608	99	7254	318700
6	108	56	24	390.5	84	2200	261100
7	144	203	69	311	75	8072	172200
8	106	35.5	22	300	84	1324	180200
9	127	124.5	58	80.5	69	4824	56400
10	130	29.5	23	148.5	107	14050	150950
11	126	27.5	14	194	112	14100	194650
12	242	11	22	355.5	220	4400	320325
總計	1371	933.5	319	3045	1042	69897	2098085

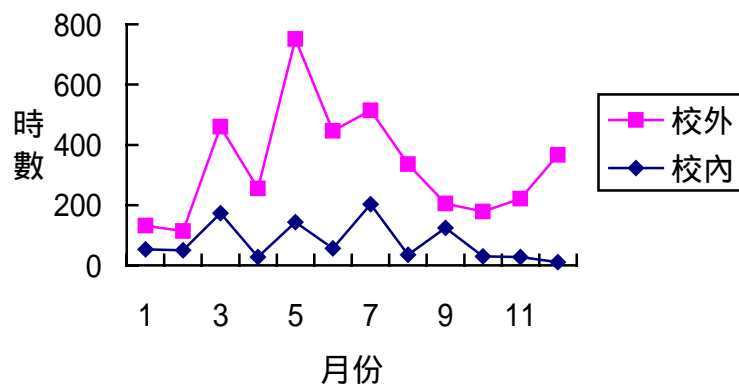


## 四、92 年度服務件數時數費用統計圖

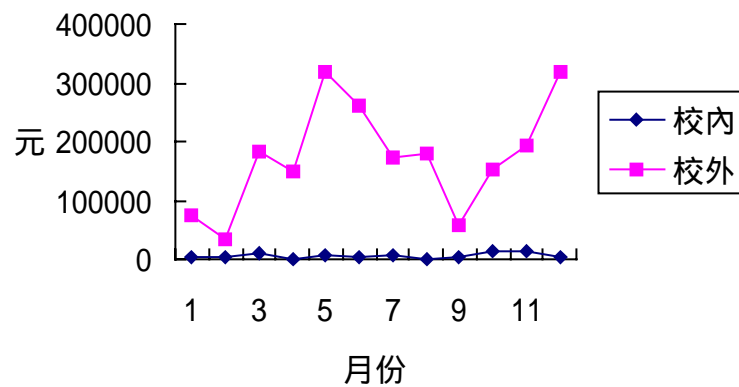
### 1. 校內外使用件數比較表



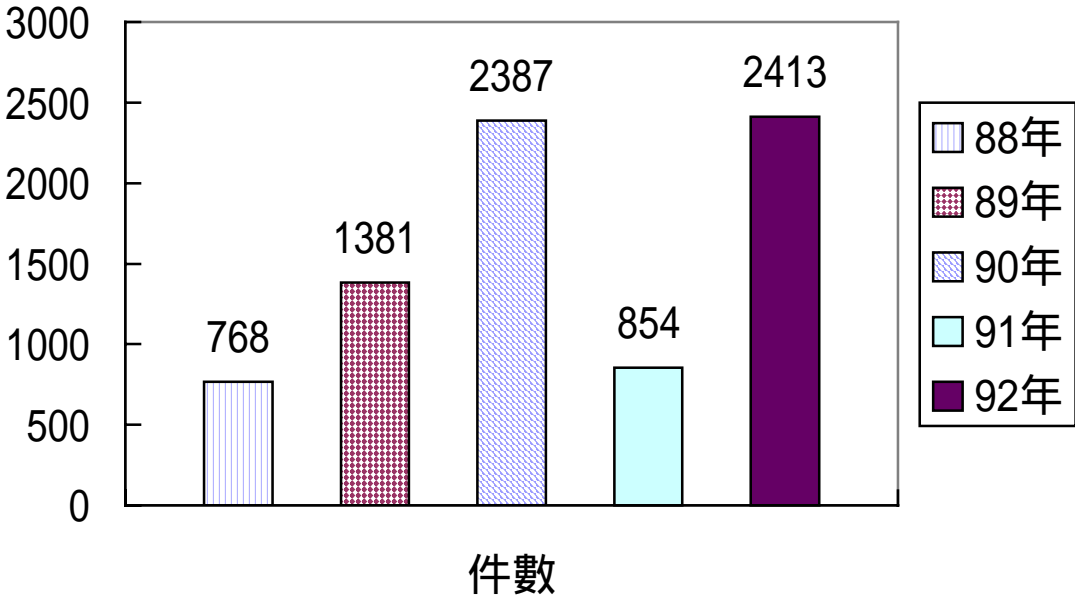
### 2. 校內外使用時數比較表



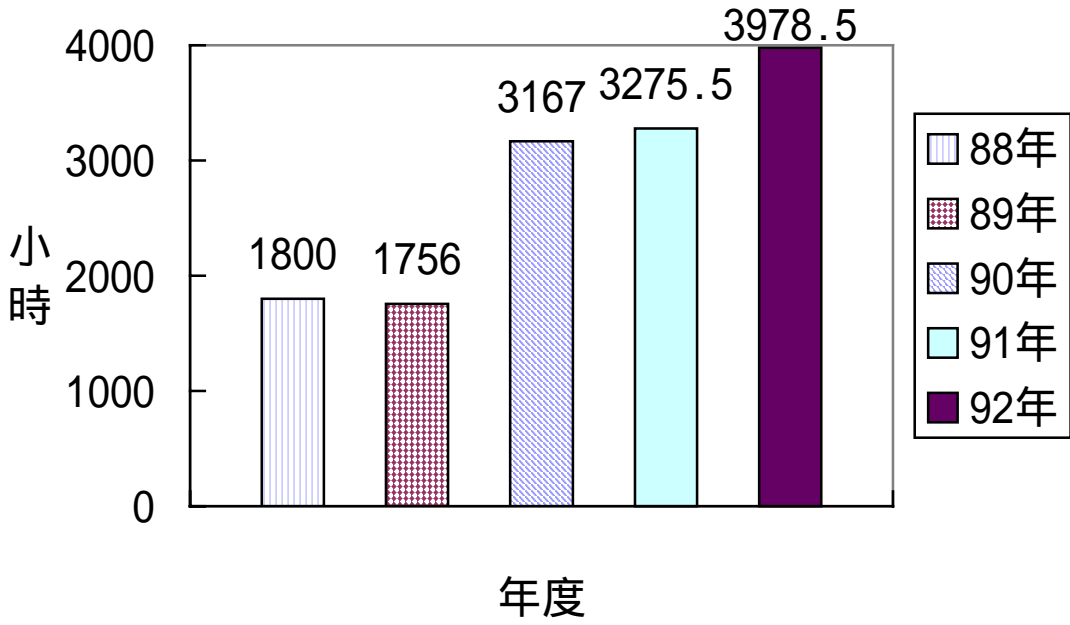
### 3. 校內外使用費用比較表



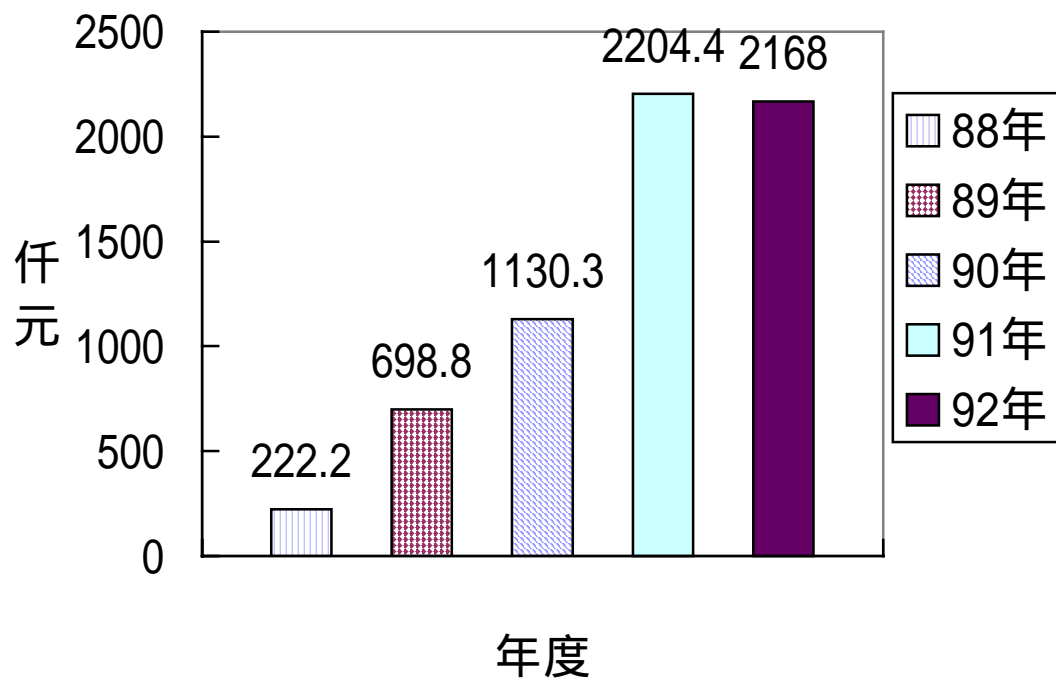
五、88 年度至 92 年度服務件數統計圖



六、88 年度至 92 年度服務時數統計圖



### 七、88 年度至 92 年度服務費用統計圖



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## 九、附件

附表一

### 台北醫學大學 共同儀器中心 500 MHz NMR 收費標準

92年2月1日起實施

實驗項目	收費	備註
一維氫譜	300 元/個	逾 20 分鐘，每 10 分鐘加收 100 元。
一維碳譜、DEPT	800 元/小時	不足半小時以半小時計費
Decoupled、NOE	400 元/peak	
二維圖譜：COSY、NOESY、HMBC、HMQC 等	800 元/小時	不足半小時以半小時計費
變溫實驗	200 元/個 600 元/小時	氫譜之變溫實驗 (短時間內完成) 長時間實驗
3D	1500 元/小時	自行 processing 圖譜

台北醫學大學 共同儀器中心  
500 MHz NMR 收費標準

92年10月1日起實施

適用於：國科會貴儀使用費轉帳、校外送測

實驗項目	收費	備註
一維氫譜	400 元/個	逾 20 分鐘，每 10 分鐘加收 100 元。
一維碳譜、DEPT	1500 元/小時	不足半小時以半小時計費
Decoupled、NOE	500 元/peak	
二維圖譜：COSY、NOESY、HMBC、HMQC 等	1500 元/小時	不足半小時以半小時計費
變溫實驗	200 元/個 600 元/小時	氫譜之變溫實驗 (短時間內完成) 長時間實驗
3D	2000 元/小時	自行 processing 圖譜
隔夜實驗	前述收費之一半	

適用於：台北醫學大學校內教師無國科會貴儀使用費者

實驗項目	收費	備註
一維氫譜	200 元/個	逾 20 分鐘，每 10 分鐘加收 100 元。
一維碳譜、DEPT	600 元/小時	不足半小時以半小時計費
Decoupled、NOE	250 元/peak	
二維圖譜：COSY、NOESY、HMBC、HMQC 等	600 元/小時	不足半小時以半小時計費
變溫實驗	100 元/個 300 元/小時	氫譜之變溫實驗 (短時間內完成) 長時間實驗
3D	1000 元/小時	自行 processing 圖譜
隔夜實驗	前述收費之一半	