

附件 2-6

河南省科学院采购项目技术性验收报告

验收日期：2026 年 06 月 25 日

采购单位	河南省科学院质量检验与分析测试研究中心	使用部门	分析测试部
项目名称	河南省科学院质量检验与分析测试研究中心河南省科学院大型仪器设备开放共享平台仪器设备购置项目	合同编号	豫财招标采购-2025-243-13
供应商	中建投（广东）国际贸易有限公司	中标（成交）通知书号	豫财招标采购-2025-243
规格型号	见附件 1 设备清单	设备生产商	见附件 1 设备清单
合同金额	见附件 1 设备清单	设备数量	1 台套
存放地点	河南省郑州市郑东新区崇实里 228 号	运行使用时间	见附件 1 设备清单
设备清单	见附件 1 设备清单		
配件清单	见附件 2 配件清单		
项目负责人意见	所列仪器设备品牌型号、参数、性能指标符合合同要求，经试用后，运行正常。		郭福
验收结论	验收通过		
验收人签名	宋文君 李成 张赞培		
监督人签名	王峰		
单位负责人意见	所列设备符合合同要求，同意验收意见。		王新

附件 1：设备清单

分包情况	合同编号	供应商	设备名称	品牌	规格型号	设备生产商	单位	数量	合同金额 (元)	运行使用时间
包 13	豫财招标采购-2025-243-13	中建投（广东）国际贸易有限公司	400M核磁共振波谱仪	Bruker	AVANCE NEO 400	布鲁克瑞士有限公司	套	1	3289000.00	2026.05.19

附件 2：配件清单

序号	数量	描述
1	1套	AVANCE NEO核磁共振谱仪主机
2	1套	Ascend Evo 400磁体
3	1套	5mm 宽带液体探头
4	1个	60位自动进样器
5	1套	工作站及软件
6	60个	5mm塑料转子
7	1个	5mm高温陶瓷转子
8	1套	液氮低温附件
9	1套	标准样品
10	1根	液氮补加管
11	1根	液氮补加管
12	1个	氮氧分离器
13	1套	3KVA, 2小时UPS
14	1套	空气压缩机
15	1台	打印机

货物签收单

收货单位：河南省科学院质量检验与分析测试研究中心

收货地址：河南省郑州市郑东新区崇实里 228 号

联系人：李雪晴 联系电话：15237197083

序号	货物名称	品牌	型号	数量	备注
1	400M 核磁共振波谱仪	BRUKER	AVANCE NEO 400	1 套	/

请阅读并理解下述声明，您在最后的签字表明您确认收到的物品与此单所填内容一致。

*兹证明：上述货物共计 7 箱，货物外包装完好，全部收讫，特此签收。

*本货物签收单所填信息均与送达您手上的实际物品的信息相符合。

*请您在确认本货物签收单内容均为正确且属实后，签字或盖章确认。

供应商代表：熊凡
2025.12.9

签收人：李雪晴
签收日期：2025.12.09

设备开箱验收单

设备名称	400M 核磁共振波谱仪	供应商	中建投（广东）国际贸易 有限公司
设备型号	AVANCE NEO 400	数量	1 套
到货时间 (开箱时间)	2026.05.06	使用部门	河南省科学院质量检验与 分析测试研究中心
验收内容及签字确认			
整机是否完好: <input checked="" type="checkbox"/> 是, <input type="checkbox"/> 否		使用单位确认: 王华	
外观是否完好: <input checked="" type="checkbox"/> 是, <input type="checkbox"/> 否		使用单位确认: 王华	
配置是否与合同要求一致: <input checked="" type="checkbox"/> 是, <input type="checkbox"/> 否		使用单位确认: 王华	
是否有保修卡: <input checked="" type="checkbox"/> 是, <input type="checkbox"/> 否		使用单位确认: 王华	
设备数量是否符合情况: <input checked="" type="checkbox"/> 是, <input type="checkbox"/> 否		使用单位确认: 王华	
随机文件是否完全: <input checked="" type="checkbox"/> 是, <input type="checkbox"/> 否		使用单位确认: 王华	
技术指标是否符合情况: <input checked="" type="checkbox"/> 是, <input type="checkbox"/> 否		使用单位确认: 王华	
参与验收人员签字	王华		
供方人员签字	熊凡		
备注	/		

附件 2-2

安装完成确认单

项目名称	河南省科学院质量检验与分析测试研究中心河南省科学院大型仪器设备开放共享平台仪器设备购置项目		
仪器设备 1 名称+型号	400M 核磁共振波谱仪+ AVANCE NEO 400		
安装位置	河南省郑州市郑东新区崇实里 228 号	安装日期	2016.05.15
安装工程师	倪庆坤	使用方代表	王
仪器设备 2 名称+型号			
安装位置		安装日期	
安装工程师		使用方代表	
仪器设备 3 名称+型号			
安装位置		安装日期	
安装工程师		使用方代表	
...			

附件 2-3

培训确认单

仪器名称	400M 核磁共振波谱仪
品牌型号	BRUKER AVANCE NEO 400
培训内容	(1) 基础操作技能培训, 包括设备的开关机、样品加载、参数设置等技术操作流程。 (2) 基础故障诊断与维护技巧培训, 比如探头信号衰减、软件报错等。
培训工程师	倪庆坤 (签名)
参训人员	路博华 梁炳平 马瑞勇 王 (签名)
培训日期	2016.05.18

试运行报告

用户单位：河南省科学院质量检验与分析测试研究中心

仪器名称：400M 核磁共振波谱仪

仪器型号：AVANCE NEO 400

仪器试运行工作内容：

对外测试氢谱、碳谱、磷谱等，试运行为期 1 个月

是否附图：是 否

存在问题及解决方案：

无。经试运行，设备各项性能指标均正常，且能达到合同要求标准

用户签名：王浩

工程师签名：倪庆坤

日期：2026.06.22

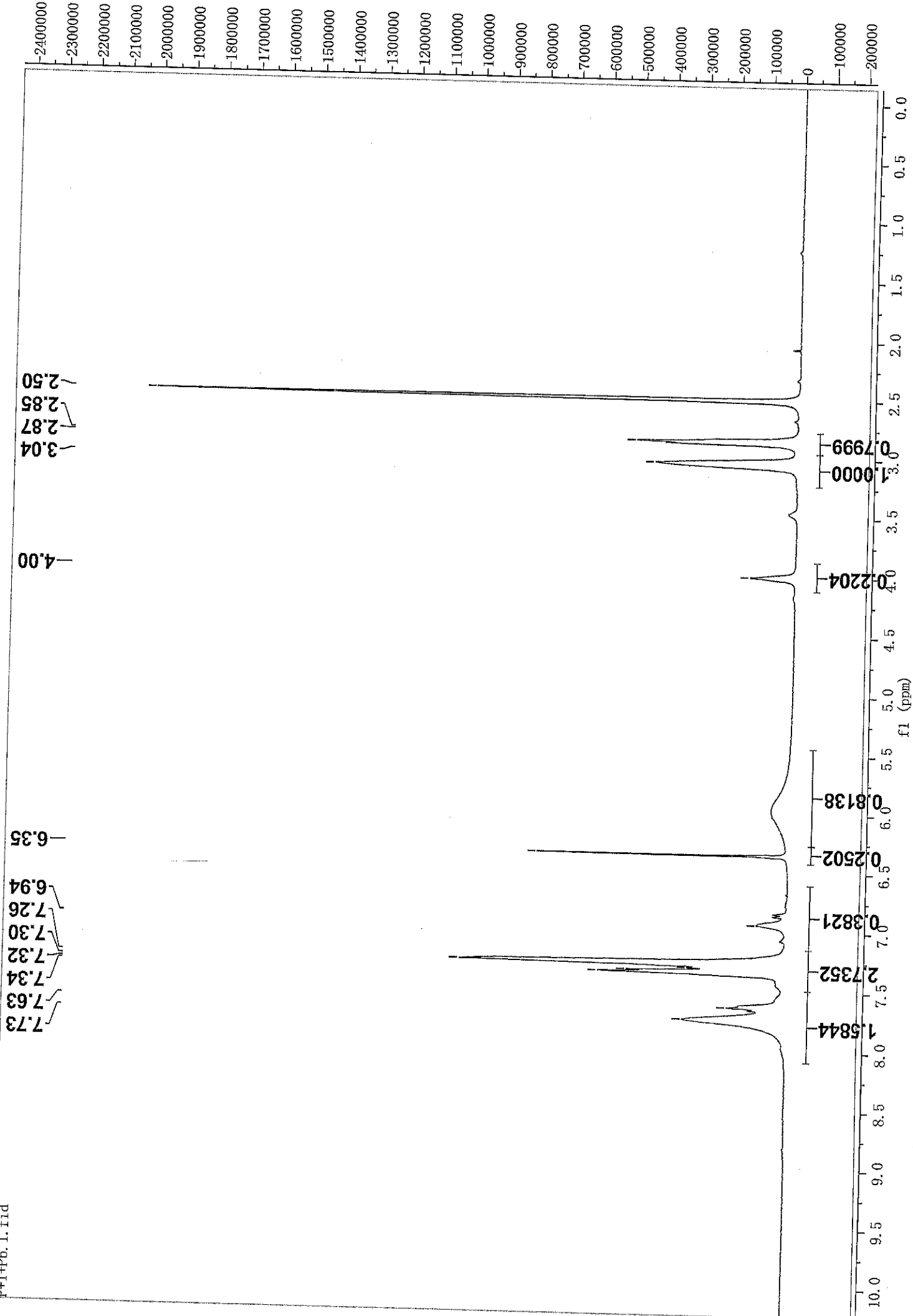
日期：2026.06.22

院属单位：

日期：2026.06.22

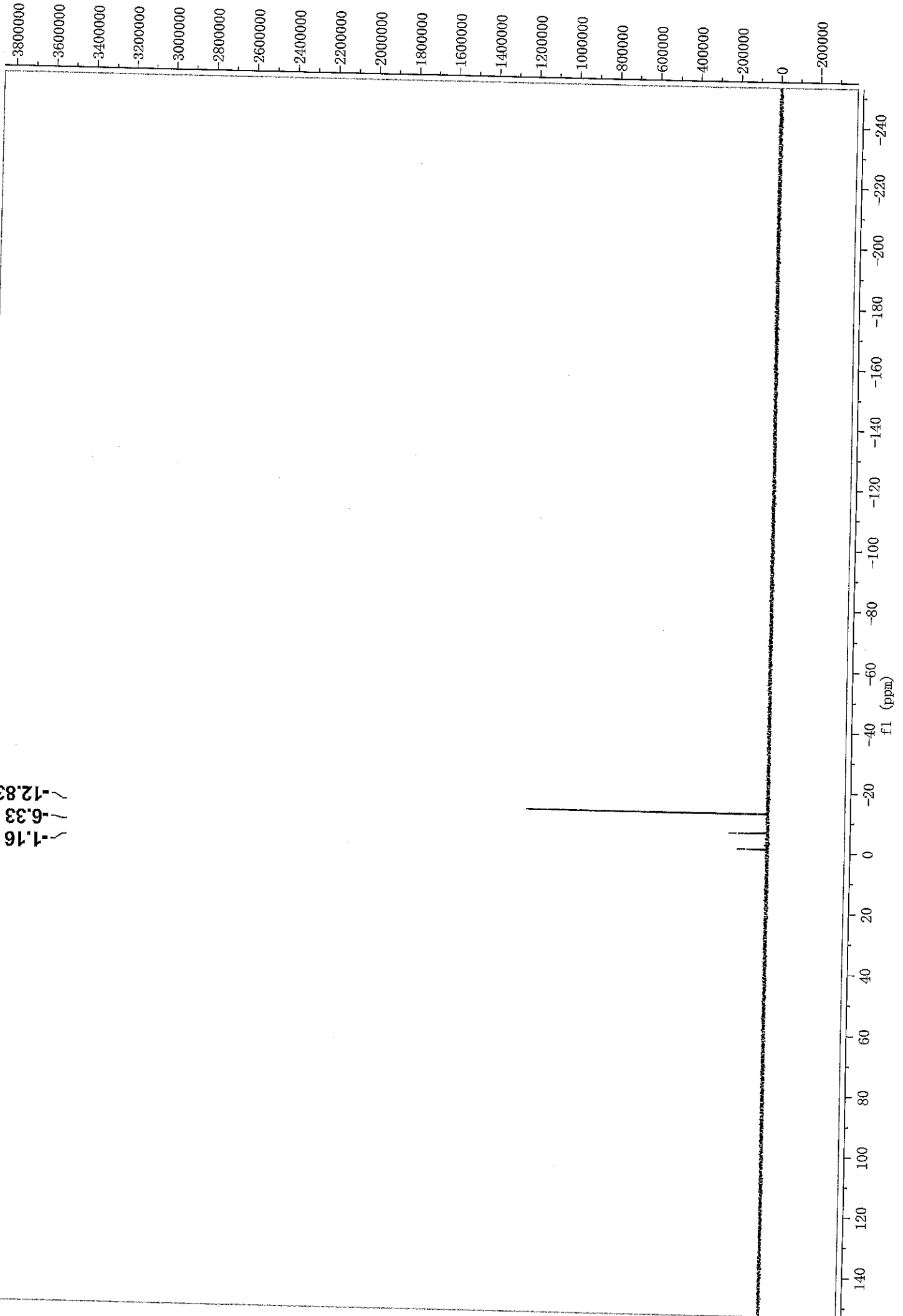


郭辉



Zhao. 1. fid

~ -1.16
~ -6.33
~ -12.83



河南省科学院采购项目预验收报告

预验收日期: 2026年06月22日

采购单位	河南省科学院质量检验与分析测试研究中心	使用部门	分析测试部
项目名称	河南省科学院质量检验与分析测试研究中心河南省科学院大型仪器设备开放共享平台仪器设备购置项目	合同编号	豫财招标采购-2025-243-13
供应商	中建投(广东)国际贸易有限公司	中标(成交)通知书号	豫财招标采购-2025-243
规格型号	AVANCE NEO 400	设备生产商	布鲁克瑞士有限公司
存放地点	河南省郑州市郑东新区崇实里 228 号	运行使用时间	2026.05.19
设备名称	400M 核磁共振波谱仪		
是否纳入院大型仪器开放共享平台	<input checked="" type="checkbox"/> 纳入院平台; 纳入时间: <u>2025年07月30日</u> <input type="checkbox"/> 未纳入; 原因: _____		
配件清单	请参见附件 1		
验收结论	请参见附件 2		
验收人签名	刘双志 王作堯 洪		
项目负责人意见	仪器品牌型号、参数、性能指标符合合同要求。经测试后,运行正常		郭辉

附件 1 配件清单

序号	数量	描述
1	1套	AVANCE NEO核磁共振谱仪主机
2	1套	Ascend Evo 400磁体
3	1套	5mm 宽带液体探头
4	1个	60位自动进样器
5	1套	工作站及软件
6	60个	5mm塑料转子
7	1个	5mm高温陶瓷转子
8	1套	液氮低温附件
9	1套	标准样品
10	1根	液氮补加管
11	1根	液氮补加管
12	1个	氮氧分离器
13	1套	3KVA, 2小时UPS
14	1套	空气压缩机
15	1台	打印机

附件 2:

1 超导磁体

1.1 具有低液氦与液氮消耗、高稳定性、高均匀性、抗干扰超屏蔽超导磁体或自屏蔽磁体：9.39T，磁体强度低温匀场线圈：14组，室温匀场线圈：36组

NMR-frequency (¹ H)	400 MHz
Operating field	9.39 Tesla
Cryogenically cooled high order shim system (on- and off-axis)	14 gradients

1.2 磁场漂移：< 4 Hz / 小时

Field stability (guaranteed value in persistent mode)	< 10 ppb/hr (< 4.0 Hz/hr)
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1.3 液氦维持时间：365天

Minimum helium hold time	365 days
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1.4 液氦消耗速率：~13ml / 小时

Approx. helium evaporation rate under stabilized conditions (T=20°C, p=1030 mbar)	~ 13 ml liquid helium/hour
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1.5 高斯强度处横向距离：< 0.5 米

Radial fringe field (horizontal distance of the 0.5mT (5G) line from the magnetic centre)	< 0.50 m
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1.6 带有液氦液面自动监视和最小液面自动报警装置

Overview Magnet Helium Nitrogen Service Event Log Notification Help Administration

The He level is read from the BSMS/ELCB.

Refill Operations Log

Date	Name	Litres	Remarks

He information

Estimated refill date: 2027-06-16 in 365 days

Refill amount: 114 litres

Min allowed level: 25 %

Min allowed level energizing: 76 %

Hold time specified: 365 days

He-Level Plot

MALE: Minimum Allowed Level Energizing
MAL: Minimum Allowed Level

Measurement date: 2026-08-15 13:18

2 射频发射系统

2.1 射频通道数：2个

File Edit View Help

Save Observes and Saved Decouples Preset Parameter Set for

Probe: 2102796_1281 F1 HR48FCAM16-602-MOLE-C-2 GP Select

Observe Decouple

Observe Comment: Default 1H pos 48D

Decouple Comment: Default 9H pos 48D

Observe	Decouple					
Nucleus	Pulse Width(µs)	Power[W]	Set Pulse Width(µs)	Power[W]	Set	Flipp
2H	640.00	1.1258	640.00	1.1258	2H	2H
2L	0.00	0.0000	0.00	0.0000	2L	2L
16B	0.00	0.0000	0.00	0.0000	16B	16B
11B	3.00	30.000	3.00	30.000	11B	11B
13C	3.00	93.346	3.00	93.346	13C	13C
14E	0.00	0.0000	0.00	0.0000	14E	14E
15N	17.00	35.103	17.00	35.102	15N	15N
17O	6.00	51.000	6.00	51.000	17O	17O
19F	12.00	15.388	12.00	15.388	19F	19F
21Ne	0.00	0.0000	0.00	0.0000	21Ne	21Ne
23Ne	0.00	0.0000	0.00	0.0000	23Ne	23Ne
25Mg	9.00	9.0000	9.00	9.0000	25Mg	25Mg
27Al	0.00	0.0000	0.00	0.0000	27Al	27Al
29Si	0.00	0.0000	0.00	0.0000	29Si	29Si
31P	8.00	47.210	8.00	47.210	31P	31P
33S	0.00	0.0000	0.00	0.0000	33S	33S
35Cl	0.00	0.0000	0.00	0.0000	35Cl	35Cl
37Cl	0.00	0.0000	0.00	0.0000	37Cl	37Cl
40K	0.00	0.0000	0.00	0.0000	40K	40K

Last Save Print Copy to Sequence Copy to Project Save

2.2 各通道具有的功能：各通道有独立的观测、去偶、信号接收、模数转换功能；

Save Design and Save Decouple Pinout Parameter Set for

Probe: Z103738_1221 F1 HR-BB-47061-ED19HD-5 G Z SP Select

Observe Decouple

Observe Decouple

Observe Decouple

Observe Comment: Default 01 015 400

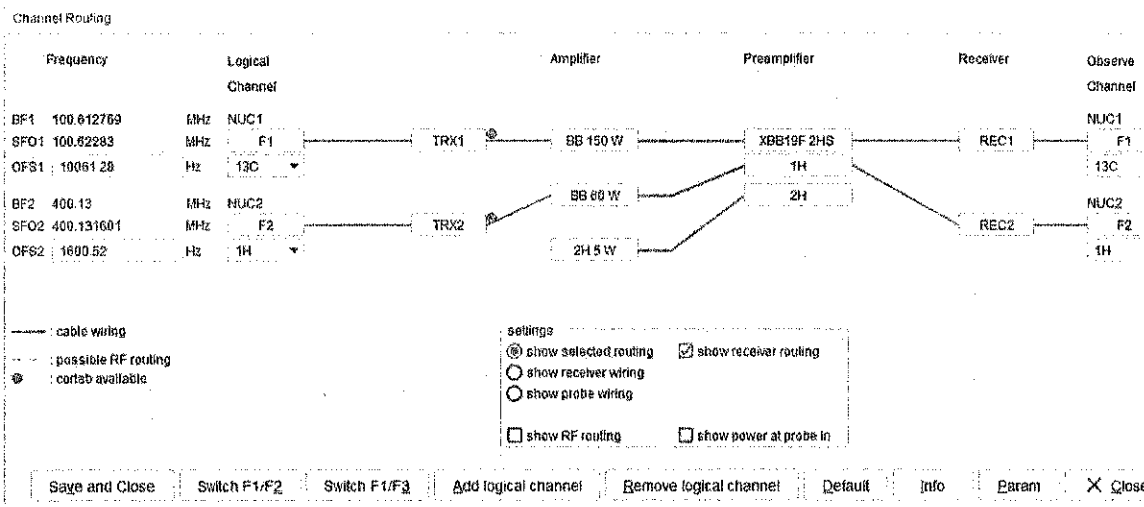
Decouple Comment: Default 01 015 400

HR Score Pinouts HR Share Pinouts Observe

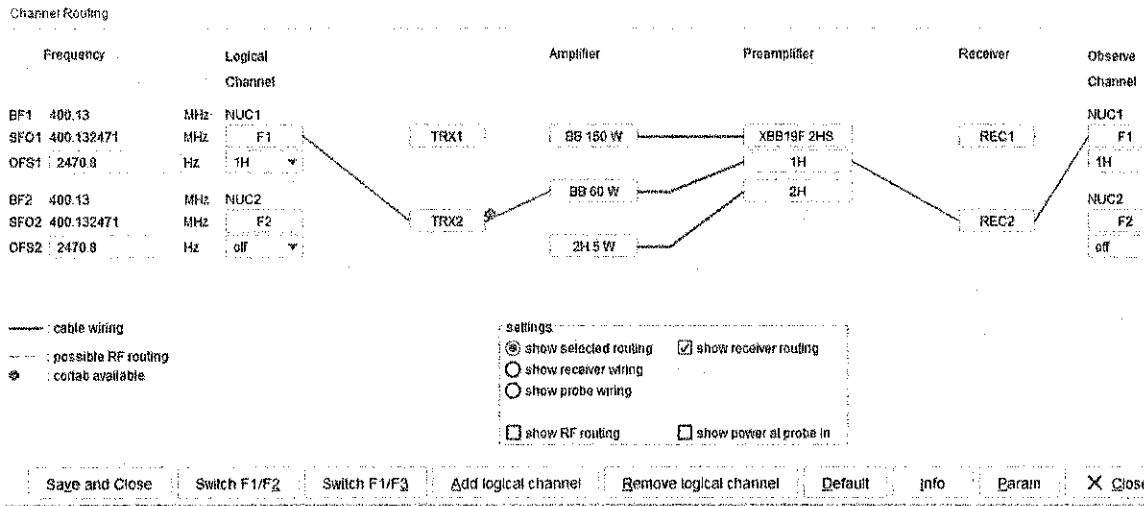
Disturb			Disturb			Set	Markers
Name	Pulse Width(µs)	Power(µW)	Set	Pulse Width(µs)	Power(µW)		
1H	8.00	23.500		8.00	23.500		1H
2H	0.10 00	1.1250		640.00	1.1250		2H
7L1	9.00	0.0000		0.00	0.0000		7L1
109	0.00	0.0000		0.00	0.0000		109
519	8.00	90.000		8.00	90.000		519
13C	8.00	93.340		8.00	93.340		13C
14N	8.00	0.0000		0.00	0.0000		14N
15N	17.00	60.100		17.00	26.100		15N
17D	8.00	91.500		0.00	91.500		17D
18F	12.00	35.380		12.00	35.380		18F
21H0	0.00	0.0000		0.00	0.0000		21H0
23H0	0.00	0.0000		0.00	0.0000		23H0
25H0	0.00	0.0000		0.00	0.0000		25H0
27H	0.00	0.0000		0.00	0.0000		27H
29H	0.00	0.0000		0.00	0.0000		29H
31P	8.00	47.210		8.00	47.210		31P
33G	8.00	0.0000		0.00	0.0000		33G
35C1	0.00	0.0000		0.00	0.0000		35C1
37G1	0.00	0.0000		0.00	0.0000		37G1
38F	8.00	0.0000		0.00	0.0000		38F

Last Save Print Copy to Subject Copy to Project Save

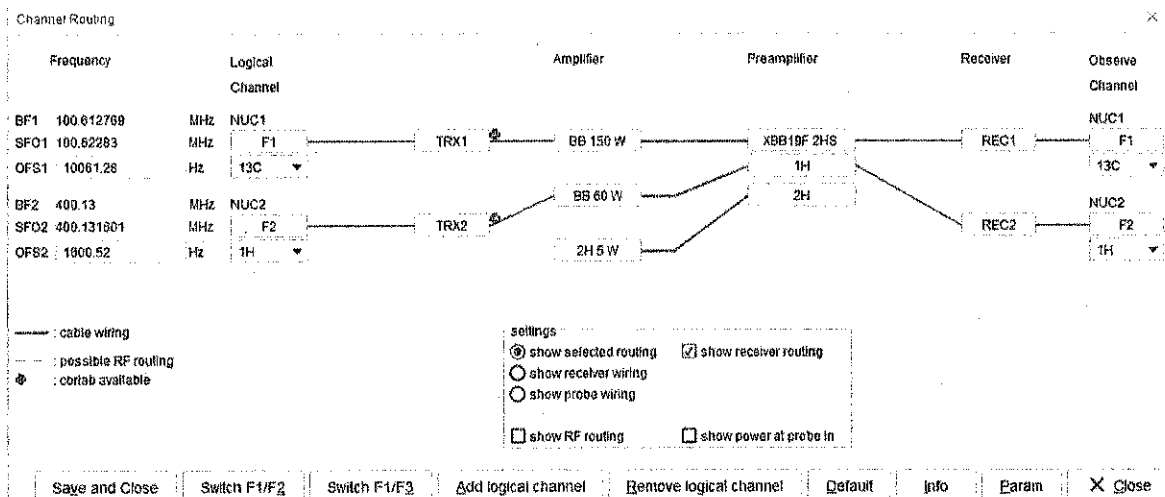
2.3 具有双功放系统



2.4 质子最大输出功率：50W



2.5 多核最大输出功率：140W



3 接收及采样

3.1接收中频： 1.852 GHz

RF Intermediate Frequency	1.852 GHz
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3.2每个通道独立的高速ADC， 采样速率： 240 兆次/秒

NMR Signal Detection	240 MSPS / 16 Bit ADC	Digital Down Converter (DDC)
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3.3 6KHz谱宽有效动态范围 > 23Bit

Effective Dynamic Range	<ul style="list-style-type: none"> > 17 Bit (SW < 7.5 MHz) > 19 Bit (SW < 1 MHz) > 23 Bit (SW < 6 kHz)
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4 氦数字锁场及梯度匀场系统

4.1 自动 / 手动匀场系统

BSMS Control Suite

Main Lock/Level Shim Autoshim Service Log

LOCK & SPIN

Phase Power Gain SPIN

SHIM

Spin	Z	Z ²	Z ³	Z ⁴	Z ⁵	Z ⁶
NonSpin	XZ	XZ ²	XZ ³	XZ ⁴	XZ ⁵	Z ⁷
Y	YZ	YZ ²	YZ ³	YZ ⁴	YZ ⁵	Z ⁸
XY	XYZ	XYZ ²	XYZ ³	XYZ ⁴	XYZ ⁵	
X ² -Y ²	(X ² -Y ²)Z	(X ² -Y ²)Z ²	(X ² -Y ²)Z ³	(X ² -Y ²)Z ⁴	(X ² -Y ²)Z ⁵	
X ³	X ³ Z					
Y ³	Y ³ Z					

STD BY

Previous Actual Step Reset

Absolute Difference

Stepsize

Sample: down missing up Shim coil temperature: 300 K

BSMS Control Suite

Main Lock/Level Shim Autoshim Service Log

AUTOSHIM

Shim Interval

SHIM

Spin	Z	Z ²	Z ³	Z ⁴	Z ⁵	Z ⁶
NonSpin	XZ	XZ ²	XZ ³	XZ ⁴	XZ ⁵	Z ⁷
Y	YZ	YZ ²	YZ ³	YZ ⁴	YZ ⁵	Z ⁸
XY	XYZ	XYZ ²	XYZ ³	XYZ ⁴	XYZ ⁵	
X ² -Y ²	(X ² -Y ²)Z	(X ² -Y ²)Z ²	(X ² -Y ²)Z ³	(X ² -Y ²)Z ⁴	(X ² -Y ²)Z ⁵	
X ³	X ³ Z					
Y ³	Y ³ Z					

STD BY

Previous Actual Step Reset

Absolute Difference

Stepsize

Sample: down missing up Shim coil temperature: 300 K

4.2 精确的氦梯度自动匀场

TopShim

Shim Report Service

SHIM

Dimension 1D 3D

Optimisation solvent's default

Optimise for 1H

Use Z6

TUNE

After off

Only

PARAMETERS

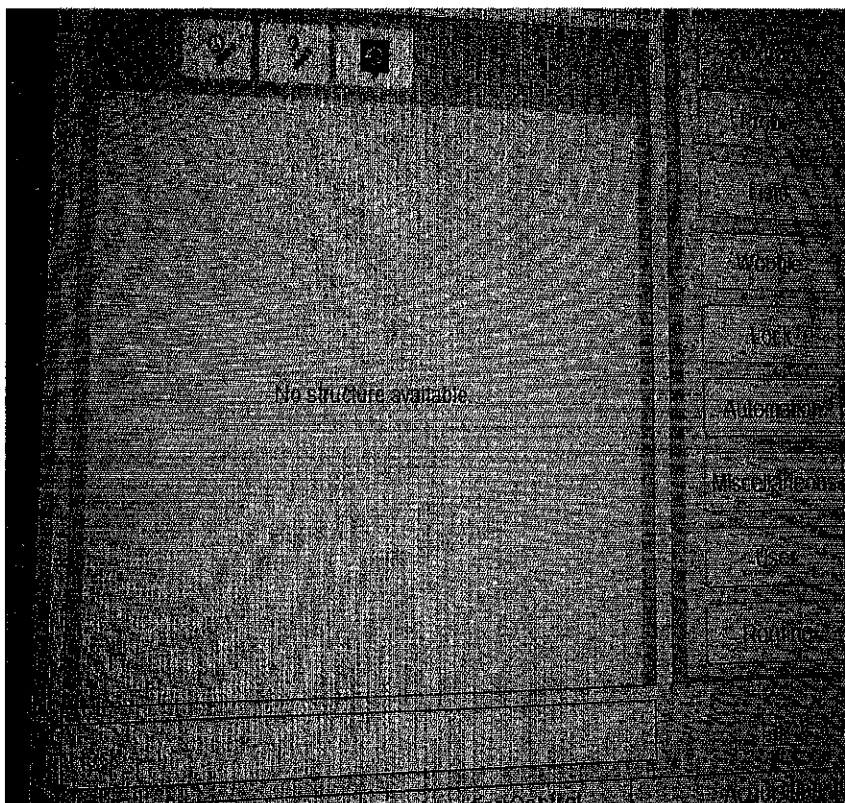
STATUS

not running

CONTROL

Start Stop Help Close

4.3 支持多溶剂峰（如吡啶）自动锁场



Solvent	Description
Acetic	acetic acid-d4
Acetone	acetone-d6
C6D6	benzene-d6
CD2Cl2	dichloromethane-d2
CD3CN	acetonitrile-d3
CD3CN_SPE	LC-SPE Solvent (Acetonitrile)
CD3OD_SPE	LC-SPE Solvent (Methanol-d4)
CDCl3	chloroform-d
CH3CN+D2O	HPLC Solvent (Acetonitrile/D2O)
CH3OH+D2O	HPLC Solvent (Methanol/D2O)
D2O	deuterium oxide
D2O_salt	deuterium oxide with salt
Dioxane	dioxane-d8
DMF	N,N-dimethylformamide-d7
DMSO	dimethylsulfoxide-d6
EtOD	ethanol-d6
H2O+D2O	90%H2O and 10%D2O
H2O+D2O_salt	90%H2O and 10%D2O with salt
HDMSO	90%DMSO and 10%DMSO-d6
Juice	fruit juice
MeOD	methanol-d4
Plasma	blood plasma
Pyr	pyridine-d5
T_H2O+D2O+Me4NCl	(CD3)4NCl in 90%H2O and 10%D2O, for NMR thermometer
T_H2O+D2O+NaAc	sodium acetate in 90%H2O and 10%D2O, for NMR thermometer
T_H2O+D2O+Phthalate	phthalate-d9 in 90% H2O and 10% D2O, for NMR thermometer
T_MeOD	methanol-d4, for NMR thermometer
TFE	trifluoroethanol-d3
THF	tetrahydrofuran-d8
Tol	toluene-d8
Urine	urine

5 Z方向射频脉冲梯度场：梯度场最大电流： $\geq 10A$

Edit Properties of probe Z163739_1221

Properties of probe Z163739_1221

Probe Identity	PGMSZ [G/cmA]	5.05	Highest gradient strength in Z direction
Product Info	PGMCZ [A]	10	Maximum permissible current in Z direction
Gradient System Parameters	^ Temperature Parameters		
Temperature Parameters			
Coil Parameters			
Sample Parameters			

6 高精度变温控制单元

6.1 控温范围：-150°C-+200°C(低温实验可以另配低温附件)

VARIABLE TEMPERATURE CONTROL (BSVT)↵

The Bruker SmartVT (BSVT) is a highly integrated unit to provide↓

↓

- Digital temperature sensor resolution better than 5mK↓
- Temperature stability depends on environment and probe (e.g. 10mK/K for HR RT probes)↓
- Supports various temperature sensor types (e.g. thermocouple T or E, PT100)↓
- VT gas flow monitoring up to 3000lph with mass flow regulation↓
- Anti-freeze mode for CryoProbes built-in (probe safety)↓
- Up to 4 independent heater channels (e.g. flow probes)↓
- Temperature measurements ready (from -150°C to 600°C), no separate heater (booster) needed↓
- Intelligent VT gas flow control for easy sample insertion with different kind of spinners (ceramic, KEL-F, etc.). No manual adjustments needed (e.g. SampleCase, SampleJet)↓
- Intelligent SmartCoolers™ (BCU) and low temperature accessories™ control (LN2 exchanger/evaporator)↓
- Accurate Sample Temperature determination and regulation with NMR Thermometer™↵

6.2 精度 $\pm 0.1^\circ\text{C}$

12.4 BSVT Specifications

General

- Multi channel intelligent Ethernet based VT architecture (PnP).
- Up to 2 heater channels (additional 2 channels possible).
- Up to 2 sensor / cooling channels (additional 3 channels possible).
- Software controlled shim cooling.
- Software controlled flush gas operation (SPB-E version).

VT control electronics

- Temperature setting resolution of 0.1 °C (TopSpin).
- BTO-2000 equivalent temperature stability.
- Applicable temperature range (without cooling option, dew point <4 °C):
 - Min. regulated temperature approx. +30 °C with 25 °C input gas temperature.
 - Max. temperature depending on probe.

6.3 利用核磁共振热电偶功能，准确测量并自动控制样品温度

BSMS and BSVT characteristics:

- Versatile magnet field stabilization options with digital NMR Lock control (ELCB)
- Ultra-stable, ultra-low noise B0 current source (ELCB)
- Ultra-stable shim current sources (SCB20, two units)
- 2G Digital NMR Lock RF (L-TRX, with 5W RF amplifier) for deuterated solvents
- Easy locking on complex lock solvents (e.g. Pyridine) even in automation
- **Accurate sample temperature determination with NMR Thermometer**
- Pulsed field gradients (GAB/2) up to 10A (50ms per second, built-in pre-emphasis)
- TopShim shimming including lineshape optimization (see JMR 182(1), 38-48, 2006)
- Bruker Smart Variable Temperature (BSVT)
 - digital temperature sensor resolution better than 5mK
 - controls with up to 4 independent VT channels
 - optional Bruker SmartCoolers (e.g. BCU-I)
 - optional Low Temperature accessories (LN2 exchanger / evaporator)
 - Temperature stability of electronics: e.g. 10 mK/K for HR RT probes
 - Supports various temperature sensor types (e.g. thermocouple T, PT100)
 - VT gas flow monitoring up to 3000 liter/h with mass flow regulation
 - Sample freeze protection for CryoProbes built-in (probe safety)

7 探头: 1H/19F- (15N-31P) 5mm Z梯度场多核二合一探头

Edit Properties of probe Z163739_1221

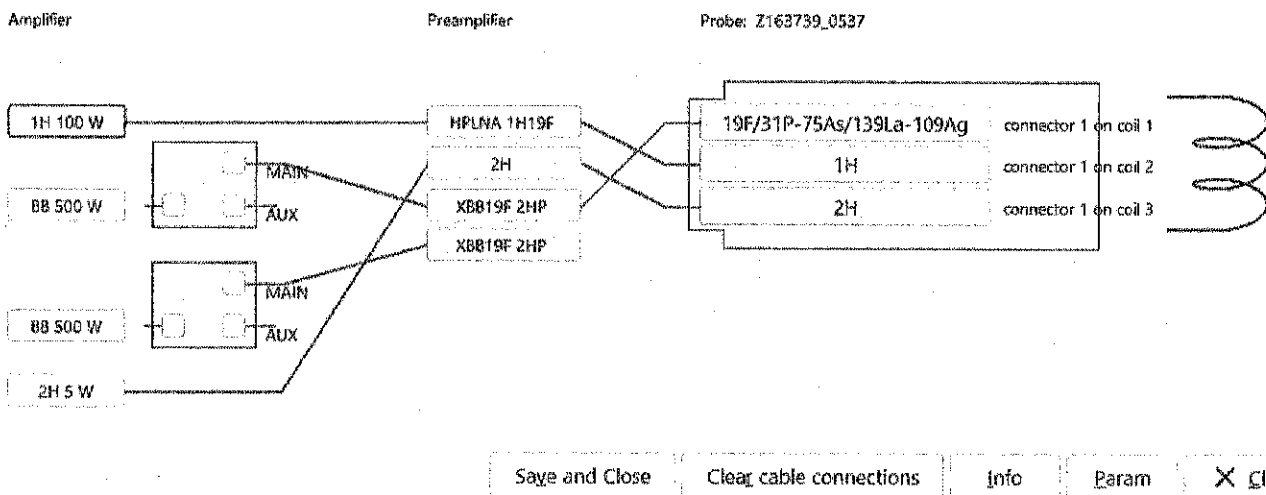
Properties of probe Z163739_1221

<ul style="list-style-type: none"> Probe Identity Product Info Gradient System Parameters Temperature Parameters Coil Parameters Sample Parameters Peak Powers Available Plugins 90 deg. Pulses 	<table border="0"> <tr> <td colspan="3"> <ul style="list-style-type: none"> ▲ Probe Identity </td> </tr> <tr> <td>PHNAME</td> <td>PI HR-BBO400S1-BBF/HD-5 0-Z SP</td> <td></td> </tr> <tr> <td>NICKNAME</td> <td></td> <td>Nickname</td> </tr> <tr> <td>PHPDID</td> <td>Z163739</td> <td>Part number</td> </tr> <tr> <td>PHPDSE</td> <td>1221</td> <td>Serial number</td> </tr> <tr> <td colspan="3"> <ul style="list-style-type: none"> ▲ Product Info </td> </tr> <tr> <td>PHTYPE</td> <td>HR</td> <td>Type of probe</td> </tr> <tr> <td>PHPDECL</td> <td>01.02</td> <td>Engineering change level</td> </tr> <tr> <td>PHPDREV</td> <td></td> <td>Revision</td> </tr> <tr> <td>PHPDDAT</td> <td>20251021</td> <td>Production date</td> </tr> <tr> <td>PHPDLOC</td> <td>BCH</td> <td>Production site</td> </tr> <tr> <td>PHNFRQ [MHz]</td> <td>400</td> <td>Nominal (1H) frequency</td> </tr> <tr> <td>PHDIAM</td> <td>SE</td> <td>Probe diameter</td> </tr> <tr> <td>PHATMA</td> <td><input checked="" type="checkbox"/></td> <td>ATMA probe?</td> </tr> <tr> <td>CYPROB</td> <td><input type="checkbox"/></td> <td>Cryo probe?</td> </tr> <tr> <td colspan="3"> <ul style="list-style-type: none"> ▲ Gradient System Parameters </td> </tr> <tr> <td>PHGTYPE</td> <td>Z</td> <td>Type of gradient system</td> </tr> <tr> <td>GRADNAME_X</td> <td></td> <td>name of X gradient field</td> </tr> <tr> <td>GRADNAME_Y</td> <td></td> <td>name of Y gradient field</td> </tr> </table>	<ul style="list-style-type: none"> ▲ Probe Identity 			PHNAME	PI HR-BBO400S1-BBF/HD-5 0-Z SP		NICKNAME		Nickname	PHPDID	Z163739	Part number	PHPDSE	1221	Serial number	<ul style="list-style-type: none"> ▲ Product Info 			PHTYPE	HR	Type of probe	PHPDECL	01.02	Engineering change level	PHPDREV		Revision	PHPDDAT	20251021	Production date	PHPDLOC	BCH	Production site	PHNFRQ [MHz]	400	Nominal (1H) frequency	PHDIAM	SE	Probe diameter	PHATMA	<input checked="" type="checkbox"/>	ATMA probe?	CYPROB	<input type="checkbox"/>	Cryo probe?	<ul style="list-style-type: none"> ▲ Gradient System Parameters 			PHGTYPE	Z	Type of gradient system	GRADNAME_X		name of X gradient field	GRADNAME_Y		name of Y gradient field
<ul style="list-style-type: none"> ▲ Probe Identity 																																																										
PHNAME	PI HR-BBO400S1-BBF/HD-5 0-Z SP																																																									
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PHGTYPE	Z	Type of gradient system																																																								
GRADNAME_X		name of X gradient field																																																								
GRADNAME_Y		name of Y gradient field																																																								

Undo Print Close

7.1 检测核：1H和19F， 共振频率在31P-199Hg核17O-109Ag之间的所有核

edprobe: Edit RF Connections



Save and Close

Clear cable connections

Info

Param

Close

7.2 1H分辨率 (旋转) ≤ 0.5 Hz (1% CHCl3)

NMR TEST ACCEPTANCE *** System: AV NEO (400.13 MHz) *** TopSpin 4.6.0
 Probe: Z169739_1221 PI HR-QNP400S1-BBFOVD-5.0-Z SP *** Sample Depth: 20 mm
 Sample: 1% Chloroform in Acetone-D6 (Z16248)
 1H lineshape with sample rotation and NS = 4 (NPT_1H_lineshape_wrot, spin rate 20 Hz)
 Line width (achieved/rotated): at 0.11% of signal height [6.5 Hz <= 12.0 Hz] <pass>
 Line width (achieved/rotated): at 0.58% of signal height [2.6 Hz <= 5.0 Hz] <pass>
 Line width (achieved/rotated): at 50% of signal height [0.27 Hz <= 0.50 Hz] <pass>
 Spinning side band (achieved): at +46 Hz [0.0%] <pass>



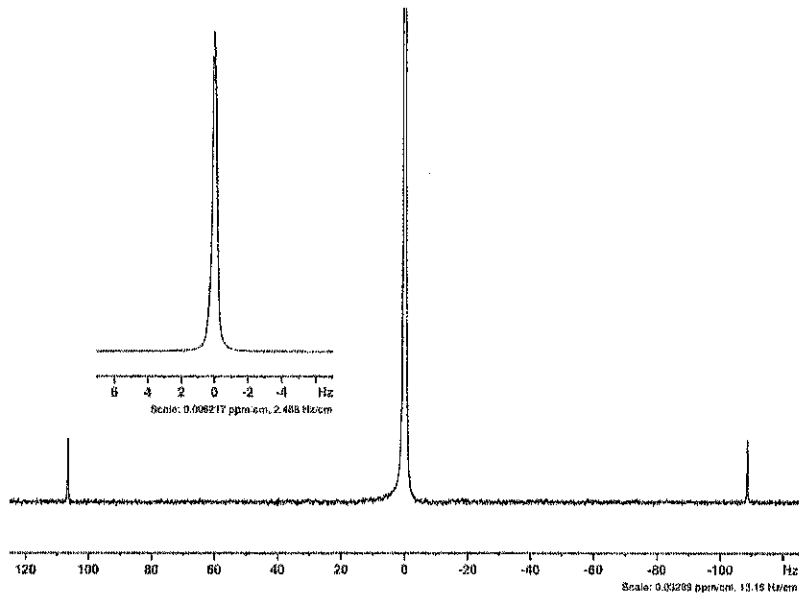
Bruker BioSpin

NPT_1H_lineshape_wrot

```

=====
NAME: NPT_1H_lineshape_wrot
PROB: 1H/13C QNP400S1
PROBHD: 5 mm QNP 1H/13C Z
PULPROG: zgpg30
TD: 65536
SOLVENT: CHLOROFORM
AQ: 0.10000000
RG: 327.68000000
AQ2: 0.00000000
RG2: 327.68000000
RG3: 327.68000000
RG4: 327.68000000
RG5: 327.68000000
RG6: 327.68000000
RG7: 327.68000000
RG8: 327.68000000
RG9: 327.68000000
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RG99: 327.68000000
RG100: 327.68000000
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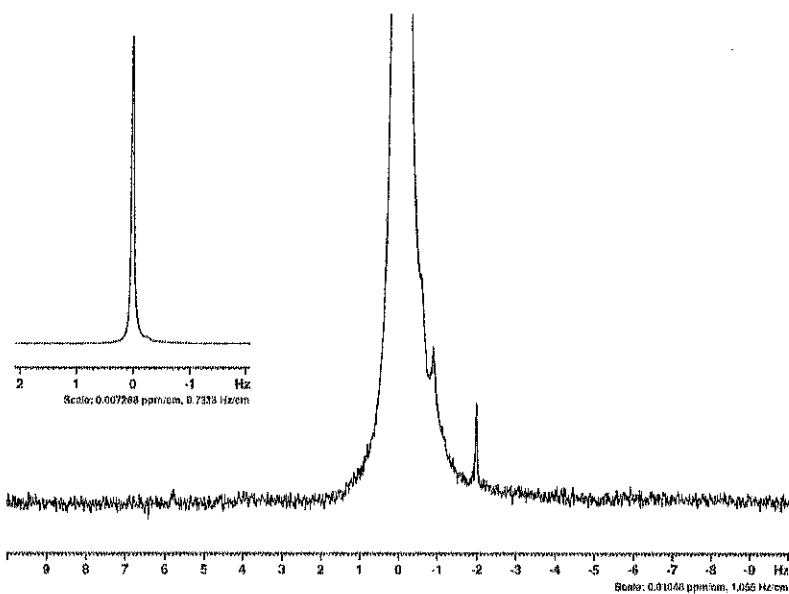


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7.3 1H 线型 (旋转) $\leq 6/12$ (1% CHCl3)

NMR TEST ACCEPTANCE *** System: AV NEO (400.13 MHz) *** TopSpin 4.5.0
 Probe: Z183739_1221 PI HR-BB04081-BBF#D-5.0-2 SP *** Sample Depth: 20 mm
 Sample: 40% Dioxane in Benzene-D6 (ASTM) (Z10183)
 13C lineshape with sample rotation (NPT_13C_lineshape_wrot, spin rate 20 Hz)
 waltz63 decoupling, PLW12=164 mW, PLW13=52.2 mW, POPDZ=120.0 us

Line width (achieved/related): at 0.11% of signal height [2.3 Hz <= 4.0 Hz] <pass>
 Line width (achieved/related): at 0.25% of signal height [0.9 Hz <= 2.0 Hz] <pass>
 Line width (achieved/related): at 50% of signal height [0.05 Hz <= 0.20 Hz] <pass>



Bruker BioSpin

NPT_13C_lineshape_wrot

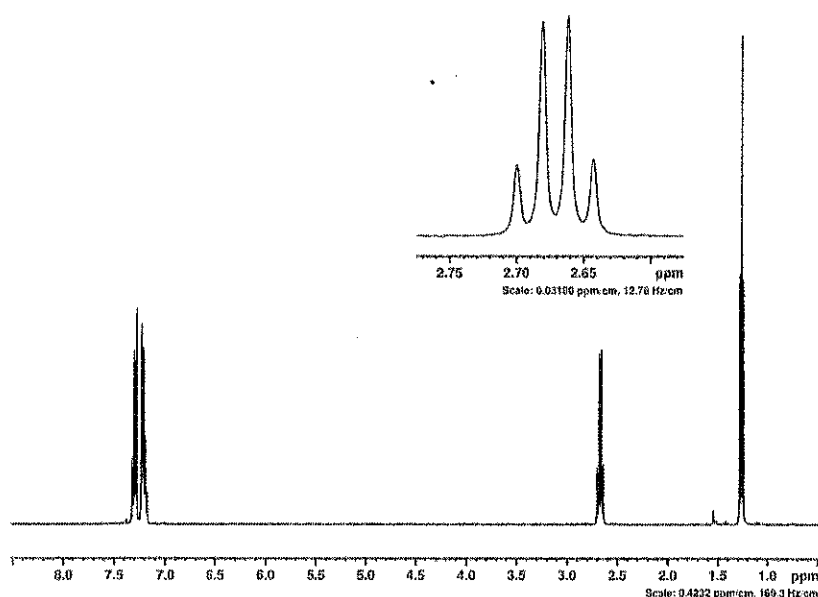
Experiment Data Parameters		Acquisition Parameters	
NAME	NPT_13C_lineshape_wrot	DATE_	04.12.03
PROBHD	5mm QNP 1H/13	TIME	13.50
PROBHD2		TIME2	
PROBHD3		TIME3	
PROBHD4		TIME4	
PROBHD5		TIME5	
PROBHD6		TIME6	
PROBHD7		TIME7	
PROBHD8		TIME8	
PROBHD9		TIME9	
PROBHD10		TIME10	
PROBHD11		TIME11	
PROBHD12		TIME12	
PROBHD13		TIME13	
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PROBHD93		TIME93	
PROBHD94		TIME94	
PROBHD95		TIME95	
PROBHD96		TIME96	
PROBHD97		TIME97	
PROBHD98		TIME98	
PROBHD99		TIME99	
PROBHD100		TIME100	

7.6 灵敏度要求:

1H 灵敏度 ≥ 550:1(0.1% EB)

NMR TEST ACCEPTANCE *** System: AV NEO (400.13 MHz) *** TopSpin 4.5.0
 Probe: Z183739_1221 PI HR-BB04081-BBF#D-5.0-2 SP *** Sample Depth: 20 mm
 Sample: 0.1% Ethylbenzene (EB) in Chloroform-D (Z10120)
 1H sensitivity (NPT_1H_sensitivity, spin rate 20 Hz)

SINO (200.0 Hz) [achieved/related]: Signal (3.00 to 2.00 ppm), Noise (4.27 to 3.77 ppm) [566.1 >> 650.0] <pass>



Bruker BioSpin

NPT_1H_sensitivity

Experiment Data Parameters		Acquisition Parameters	
NAME	NPT_1H_sensitivity	DATE_	04.12.03
PROBHD	5mm QNP 1H/13	TIME	13.50
PROBHD2		TIME2	
PROBHD3		TIME3	
PROBHD4		TIME4	
PROBHD5		TIME5	
PROBHD6		TIME6	
PROBHD7		TIME7	
PROBHD8		TIME8	
PROBHD9		TIME9	
PROBHD10		TIME10	
PROBHD11		TIME11	
PROBHD12		TIME12	
PROBHD13		TIME13	
PROBHD14		TIME14	
PROBHD15		TIME15	
PROBHD16		TIME16	
PROBHD17		TIME17	
PROBHD18		TIME18	
PROBHD19		TIME19	
PROBHD20		TIME20	
PROBHD21		TIME21	
PROBHD22		TIME22	
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PROBHD33		TIME33	
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PROBHD93		TIME93	
PROBHD94		TIME94	
PROBHD95		TIME95	
PROBHD96		TIME96	
PROBHD97		TIME97	
PROBHD98		TIME98	
PROBHD99		TIME99	
PROBHD100		TIME100	

13C 灵敏度 ≥ 220:1(ASTM)

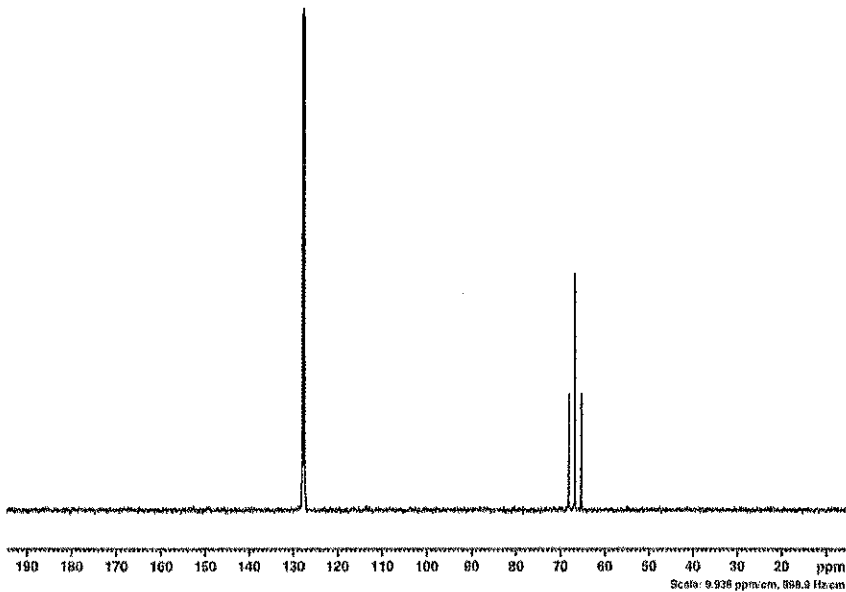
NMR TEST ACCEPTANCE *** System: AV NEO (400.13 MHz) *** TopSpin 4.5.0
 Probe: Z163739_1221 P1 H1-BB0400S1-BBFAVD-5.0-Z SP ** Sample Depth: 20 mm
 Sample: 40% Dioxane in Benzene-D6 (ASTM) (Z10163)
 13C sensitivity (NPT_13C_sensitivity, spin rate 20 Hz)

SINO (40.0 ppm) [achieved/rated]: Signal (127.61 ppm), Noise (122.75 to 82.75 ppm) [240.4 >= 220.0] <pass>



Bruker BioSpin

NPT_13C_sensitivity



Parameter	Value	Unit
NAME	NPT_13C_sensitivity	
EXPNO	1	
PROCNO	1	
PROBHD	5.0	mm
PROBHD2	5.0	mm
PROBHD3	5.0	mm
PROBHD4	5.0	mm
PROBHD5	5.0	mm
PROBHD6	5.0	mm
PROBHD7	5.0	mm
PROBHD8	5.0	mm
PROBHD9	5.0	mm
PROBHD10	5.0	mm
PROBHD11	5.0	mm
PROBHD12	5.0	mm
PROBHD13	5.0	mm
PROBHD14	5.0	mm
PROBHD15	5.0	mm
PROBHD16	5.0	mm
PROBHD17	5.0	mm
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PROBHD21	5.0	mm
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PROBHD26	5.0	mm
PROBHD27	5.0	mm
PROBHD28	5.0	mm
PROBHD29	5.0	mm
PROBHD30	5.0	mm
PROBHD31	5.0	mm
PROBHD32	5.0	mm
PROBHD33	5.0	mm
PROBHD34	5.0	mm
PROBHD35	5.0	mm
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PROBHD53	5.0	mm
PROBHD54	5.0	mm
PROBHD55	5.0	mm
PROBHD56	5.0	mm
PROBHD57	5.0	mm
PROBHD58	5.0	mm
PROBHD59	5.0	mm
PROBHD60	5.0	mm
PROBHD61	5.0	mm
PROBHD62	5.0	mm
PROBHD63	5.0	mm
PROBHD64	5.0	mm
PROBHD65	5.0	mm
PROBHD66	5.0	mm
PROBHD67	5.0	mm
PROBHD68	5.0	mm
PROBHD69	5.0	mm
PROBHD70	5.0	mm
PROBHD71	5.0	mm
PROBHD72	5.0	mm
PROBHD73	5.0	mm
PROBHD74	5.0	mm
PROBHD75	5.0	mm
PROBHD76	5.0	mm
PROBHD77	5.0	mm
PROBHD78	5.0	mm
PROBHD79	5.0	mm
PROBHD80	5.0	mm
PROBHD81	5.0	mm
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PROBHD86	5.0	mm
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PROBHD95	5.0	mm
PROBHD96	5.0	mm
PROBHD97	5.0	mm
PROBHD98	5.0	mm
PROBHD99	5.0	mm
PROBHD100	5.0	mm

13C 灵敏度 ≥ 250:1(10% EB)

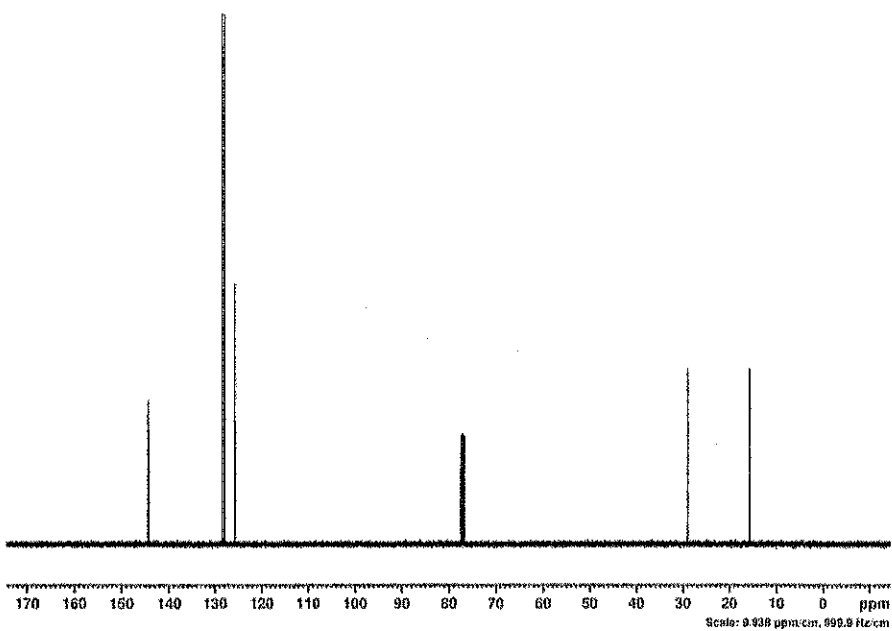
NMR TEST ACCEPTANCE *** System: AV NEO (400.13 MHz) *** TopSpin 4.5.0
 Probe: Z163739_1221 P1 H1-BB0400S1-BBFAVD-5.0-Z SP ** Sample Depth: 20 mm
 Sample: 10% Ethylbenzene (EB) in Chloroform-D (Z10163)
 13C sensitivity with 1H decoupling (NPT_13C_sensitivity_dec1h, spin rate 20 Hz)

SINO (40.0 ppm) [achieved/rated]: Signal (127.95 ppm), Noise (122.32 to 82.32 ppm) [279.3 >= 250.0] <pass>



Bruker BioSpin

NPT_13C_sensitivity_dec1h



Parameter	Value	Unit
NAME	NPT_13C_sensitivity_dec1h	
EXPNO	1	
PROCNO	1	
PROBHD	5.0	mm
PROBHD2	5.0	mm
PROBHD3	5.0	mm
PROBHD4	5.0	mm
PROBHD5	5.0	mm
PROBHD6	5.0	mm
PROBHD7	5.0	mm
PROBHD8	5.0	mm
PROBHD9	5.0	mm
PROBHD10	5.0	mm
PROBHD11	5.0	mm
PROBHD12	5.0	mm
PROBHD13	5.0	mm
PROBHD14	5.0	mm
PROBHD15	5.0	mm
PROBHD16	5.0	mm
PROBHD17	5.0	mm
PROBHD18	5.0	mm
PROBHD19	5.0	mm
PROBHD20	5.0	mm
PROBHD21	5.0	mm
PROBHD22	5.0	mm
PROBHD23	5.0	mm
PROBHD24	5.0	mm
PROBHD25	5.0	mm
PROBHD26	5.0	mm
PROBHD27	5.0	mm
PROBHD28	5.0	mm
PROBHD29	5.0	mm
PROBHD30	5.0	mm
PROBHD31	5.0	mm
PROBHD32	5.0	mm
PROBHD33	5.0	mm
PROBHD34	5.0	mm
PROBHD35	5.0	mm
PROBHD36	5.0	mm
PROBHD37	5.0	mm
PROBHD38	5.0	mm
PROBHD39	5.0	mm
PROBHD40	5.0	mm
PROBHD41	5.0	mm
PROBHD42	5.0	mm
PROBHD43	5.0	mm
PROBHD44	5.0	mm
PROBHD45	5.0	mm
PROBHD46	5.0	mm
PROBHD47	5.0	mm
PROBHD48	5.0	mm
PROBHD49	5.0	mm
PROBHD50	5.0	mm
PROBHD51	5.0	mm
PROBHD52	5.0	mm
PROBHD53	5.0	mm
PROBHD54	5.0	mm
PROBHD55	5.0	mm
PROBHD56	5.0	mm
PROBHD57	5.0	mm
PROBHD58	5.0	mm
PROBHD59	5.0	mm
PROBHD60	5.0	mm
PROBHD61	5.0	mm
PROBHD62	5.0	mm
PROBHD63	5.0	mm
PROBHD64	5.0	mm
PROBHD65	5.0	mm
PROBHD66	5.0	mm
PROBHD67	5.0	mm
PROBHD68	5.0	mm
PROBHD69	5.0	mm
PROBHD70	5.0	mm
PROBHD71	5.0	mm
PROBHD72	5.0	mm
PROBHD73	5.0	mm
PROBHD74	5.0	mm
PROBHD75	5.0	mm
PROBHD76	5.0	mm
PROBHD77	5.0	mm
PROBHD78	5.0	mm
PROBHD79	5.0	mm
PROBHD80	5.0	mm
PROBHD81	5.0	mm
PROBHD82	5.0	mm
PROBHD83	5.0	mm
PROBHD84	5.0	mm
PROBHD85	5.0	mm
PROBHD86	5.0	mm
PROBHD87	5.0	mm
PROBHD88	5.0	mm
PROBHD89	5.0	mm
PROBHD90	5.0	mm
PROBHD91	5.0	mm
PROBHD92	5.0	mm
PROBHD93	5.0	mm
PROBHD94	5.0	mm
PROBHD95	5.0	mm
PROBHD96	5.0	mm
PROBHD97	5.0	mm
PROBHD98	5.0	mm
PROBHD99	5.0	mm
PROBHD100	5.0	mm

31P 灵敏度 ≥ 200:1(TPP)

NMR TEST ACCEPTANCE *** System: AV NEO (400.13 MHz) *** TopSpin 4.5.0
 Probe: Z163739_1221 PI HR-BBO400S1-BBFH-D-5.0-Z SP *** Sample Depth: 20 mm
 Sample: 0.0485 M Triphenyl Phosphate (TPP, (C6H5)3PO4) in Acetone-D6 (Z10201)
 31P sensitivity (NPT_31P_sensitivity, spin rate 20 Hz)

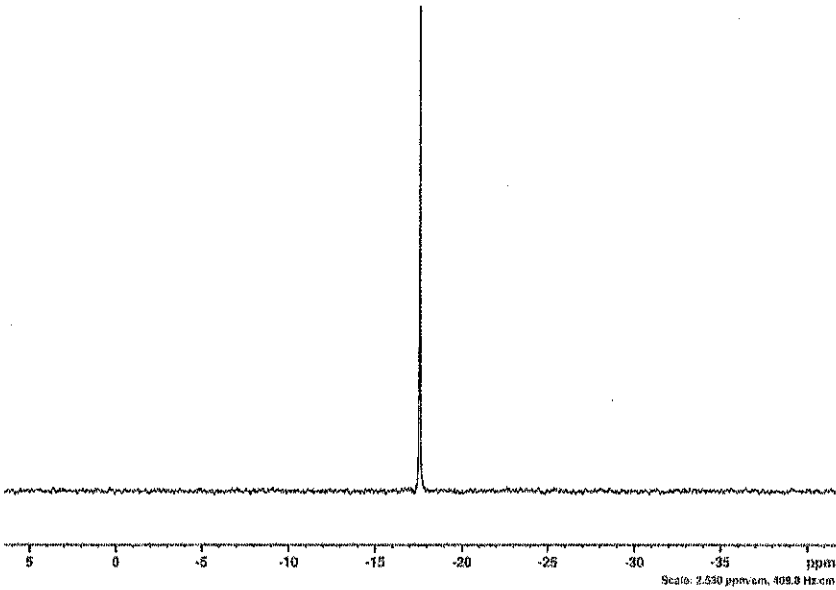
SINO (5.0 ppm) [achieved/rated]: Signal (-17.60 ppm), Noise (5.41 to 0.40 ppm) [243.6 >= 200.0] <pass>



Bruker BioSpin

NPT_31P_sensitivity

GENERAL DATA OVERVIEW		STRUCTURAL ESTIMATION	
NAME	Z163739_1221	NAME	Z163739_1221
EXPNO	1	EXPNO	1
F2 - Acquired Parameters		F2 - Acquired Parameters	
DATE_	20101010	DATE_	20101010
TIME	11:10:10	TIME	11:10:10
PROBHD	5 mm BBO400 1H/31P	PROBHD	5 mm BBO400 1H/31P
PROBHD2		PROBHD2	
NUC1	31P	NUC1	31P
NUC2	1H	NUC2	1H
NUC3		NUC3	
NUC4		NUC4	
NUC5		NUC5	
NUC6		NUC6	
NUC7		NUC7	
NUC8		NUC8	
NUC9		NUC9	
NUC10		NUC10	
NUC11		NUC11	
NUC12		NUC12	
NUC13		NUC13	
NUC14		NUC14	
NUC15		NUC15	
NUC16		NUC16	
NUC17		NUC17	
NUC18		NUC18	
NUC19		NUC19	
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NUC22		NUC22	
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NUC27		NUC27	
NUC28		NUC28	
NUC29		NUC29	
NUC30		NUC30	
NUC31		NUC31	
NUC32		NUC32	
NUC33		NUC33	
NUC34		NUC34	
NUC35		NUC35	
NUC36		NUC36	
NUC37		NUC37	
NUC38		NUC38	
NUC39		NUC39	
NUC40		NUC40	
NUC41		NUC41	
NUC42		NUC42	
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NUC90		NUC90	
NUC91		NUC91	
NUC92		NUC92	
NUC93		NUC93	
NUC94		NUC94	
NUC95		NUC95	
NUC96		NUC96	
NUC97		NUC97	
NUC98		NUC98	
NUC99		NUC99	
NUC100		NUC100	



15N灵敏度 ≥ 30:1 (90% formamide)

NMR TEST ACCEPTANCE *** System: AV NEO (400.13 MHz) *** TopSpin 4.5.0
 Probe: Z163739_1221 PI HR-BBO400S1-BBFH-D-6.0-Z SP *** Sample Depth: 20 mm
 Sample: 90% Formamide in Dimethyl Sulfoxide-D6 (Z10187)
 15N sensitivity with 1H decoupling (NPT_15N_sensitivity_decoupl, spin rate 20 Hz)
 PCPD2 1H pulse determined using pulsedec: 84.62 us @ 186 mW

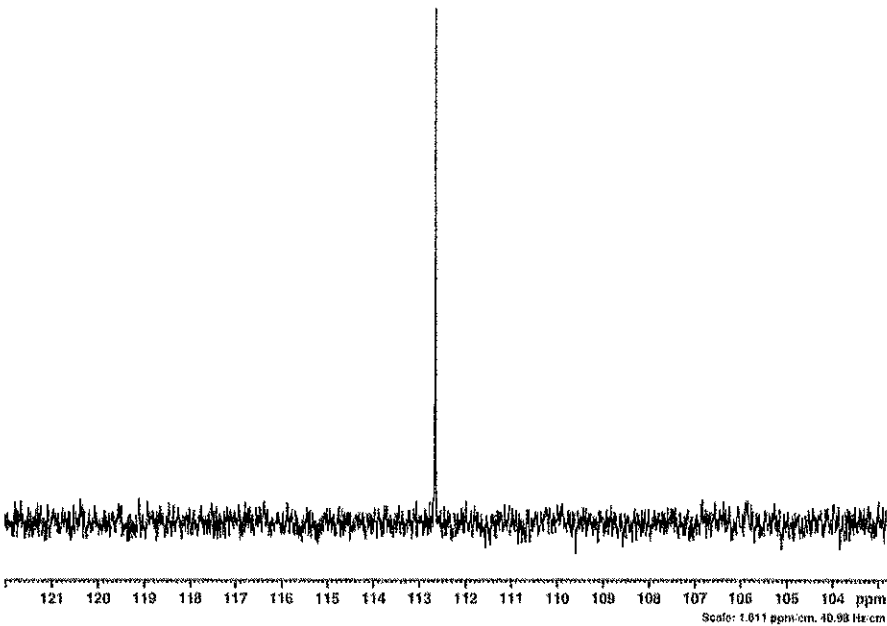
SINO (2.0 ppm) [achieved/rated]: Signal (112.85 ppm), Noise (115.17 to 113.16 ppm) [40.9 >= 30.0] <pass>



Bruker BioSpin

NPT_15N_sensitivity_decoupl

GENERAL DATA OVERVIEW		STRUCTURAL ESTIMATION	
NAME	Z163739_1221	NAME	Z163739_1221
EXPNO	1	EXPNO	1
F2 - Acquired Parameters		F2 - Acquired Parameters	
DATE_	20101010	DATE_	20101010
TIME	11:10:10	TIME	11:10:10
PROBHD	5 mm BBO400 1H/15N	PROBHD	5 mm BBO400 1H/15N
PROBHD2		PROBHD2	
NUC1	15N	NUC1	15N
NUC2	1H	NUC2	1H
NUC3		NUC3	
NUC4		NUC4	
NUC5		NUC5	
NUC6		NUC6	
NUC7		NUC7	
NUC8		NUC8	
NUC9		NUC9	
NUC10		NUC10	
NUC11		NUC11	
NUC12		NUC12	
NUC13		NUC13	
NUC14		NUC14	
NUC15		NUC15	
NUC16		NUC16	
NUC17		NUC17	
NUC18		NUC18	
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NUC22		NUC22	
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NUC30		NUC30	
NUC31		NUC31	
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NUC95		NUC95	
NUC96		NUC96	
NUC97		NUC97	
NUC98		NUC98	
NUC99		NUC99	
NUC100		NUC100	



19F灵敏度 ≥ 550:1 (90% TFT)

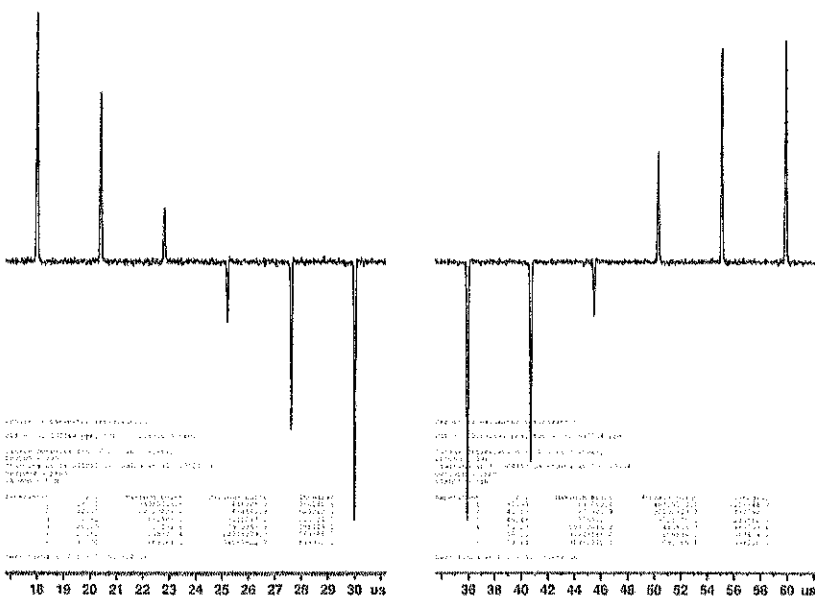
19F ≤ 12μs (TFT sample)

NMR TEST ACCEPTANCE *** System: AV NEO (400.13 MHz) *** TopSpin 4.5.0
 Probe: Z163739_1221 PI HR-BBO400S1-BBF/H/D 5.0 Z SP *** Sample Depth: 20 mm
 Sample: 0.05% Trifluorotoluene (TFT, a.a.a.-CF3C6H5) in Chloroform-D (Z16234)
 P90 19F pulse calibration (NPT_10F_p90determination1_19f, spin rate 0 Hz)
 Result: [90] = 12.0 us @ 35.6 W [50] = 47.1 us => [PDelay = 2'180 - 360] = 0.8 us
 ATTENTION: Updated PROSOL Tables with [12.0 us @ 35.4 W]
 Deviation from pulse target value (= 12.0 us): -0.3%



Bruker BioSpin

NPT_10F_p90determination1_19f



Channel	Frequency	Power	Phase	Offset
19F	400.13 MHz	35.6 W	0	0
13C	101.25 MHz	0 W	0	0

PROSOL TABLES
 Channel: 19F
 Pulse: p90
 Duration: 12.0 us
 Power: 35.6 W
 Phase: 0

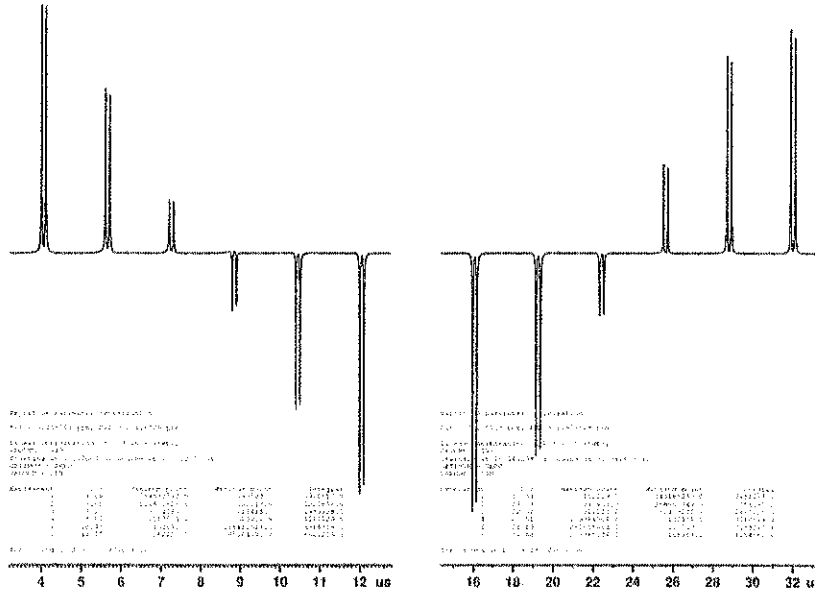
13C ≤ 8μs (ASTM sample)

NMR TEST ACCEPTANCE *** System: AV NEO (400.13 MHz) *** TopSpin 4.6.0
 Probe: Z163739_1221 PI HR-BBO400S1-BBF/H/D 5.0 Z SP *** Sample Depth: 20 mm
 Sample: 100 mM Urea-15N, 100 mM Methanol-13C in Dimethyl Sulfoxide-D6 (Z19283)
 Indirect P90 13C pulse calibration (NPT_1H_p90determination2_13c, spin rate 0 Hz)
 Result: [90] = 8.0 us @ 94.0 W [70] = 23.6 us => [PDelay = 3'90 - 270] = 0.3 us
 ATTENTION: Updated PROSOL Tables with [8.0 us @ 93.3 W]
 Deviation from pulse target value (= 8.0 us): -0.4%



Bruker BioSpin

NPT_1H_p90determination2_13c



Channel	Frequency	Power	Phase	Offset
13C	101.25 MHz	94.0 W	0	0
1H	400.13 MHz	0 W	0	0

PROSOL TABLES
 Channel: 13C
 Pulse: p90
 Duration: 8.0 us
 Power: 94.0 W
 Phase: 0

31P ≤ 8μs (TPP sample)

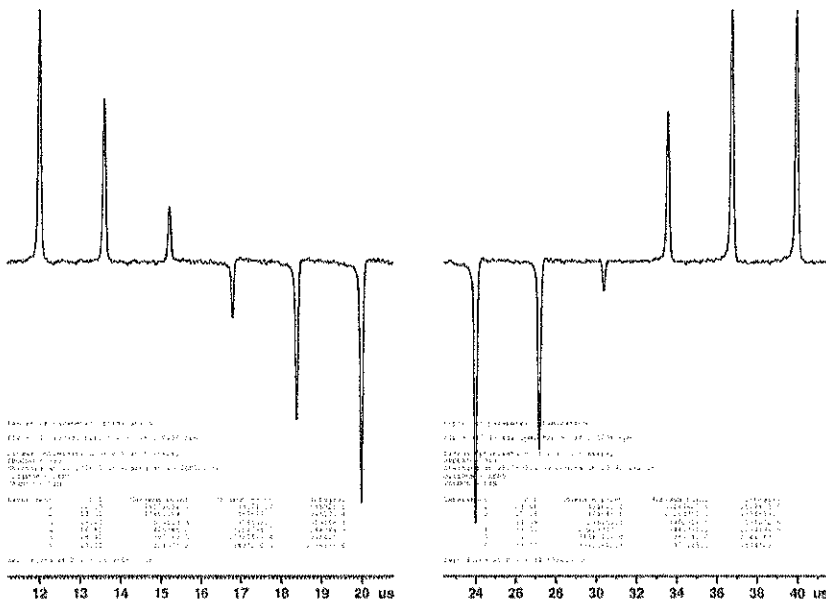
NMR TEST ACCEPTANCE *** System: AV NEO (400.13 MHz) *** TopSpin 4.5.0
 Probe: Z163739_1221 PI HR-BBO400S1-BBF/H/D-5.0-Z SP *** Sample Depth: 20 mm
 Sample: 0.0486 M Triphenyl Phosphite (TPP, (C6H5)3PO) in Acetone-D6 (Z10201)
 P90 31P pulse calibration (NPT_31P_p90determination1_31p, spin rate 0 Hz)
 Result: [P90] = 8.0 us @ 47.3 W [80] = 30.0 us ==> [PDelay = 2*180 - 360] = 1.1 us
 ATTENTION: Updated PROSCL Tables with [8.0 us @ 47.2 W]
 Deviation from pulse target value (= 8.0 us): -0.1%

P90 31P pulse [achieved/rated]: @ 47.3 W [8.0 us <= 8.0 us] <pass>



Bruker BioSpin

NPT_31P_p90determination1_31p



System: AV NEO (400.13 MHz) *** TopSpin 4.5.0
 Probe: Z163739_1221 PI HR-BBO400S1-BBF/H/D-5.0-Z SP *** Sample Depth: 20 mm
 Sample: 0.0486 M Triphenyl Phosphite (TPP, (C6H5)3PO) in Acetone-D6 (Z10201)
 P90 31P pulse calibration (NPT_31P_p90determination1_31p, spin rate 0 Hz)
 Result: [P90] = 8.0 us @ 47.3 W [80] = 30.0 us ==> [PDelay = 2*180 - 360] = 1.1 us
 ATTENTION: Updated PROSCL Tables with [8.0 us @ 47.2 W]
 Deviation from pulse target value (= 8.0 us): -0.1%

Parameter	Value	Unit
NUC1	31	P
NUC2	13	C
NUC3	15	N
NUC4	1	H
NUC5	16	O
NUC6	17	O
NUC7	19	F
NUC8	23	Na
NUC9	25	Mg
NUC10	27	Al
NUC11	29	Si
NUC12	31	P
NUC13	33	S
NUC14	35	Cl
NUC15	37	Cl
NUC16	39	K
NUC17	41	K
NUC18	43	Ca
NUC19	45	Ca
NUC20	47	Ti
NUC21	49	Ti
NUC22	51	V
NUC23	53	V
NUC24	55	Cr
NUC25	57	Fe
NUC26	59	Fe
NUC27	61	Ni
NUC28	63	Ni
NUC29	65	Cu
NUC30	67	Cu
NUC31	69	Zn
NUC32	71	Zn
NUC33	73	Ga
NUC34	75	Ga
NUC35	77	As
NUC36	79	As
NUC37	81	Sb
NUC38	83	Sb
NUC39	85	Te
NUC40	87	Te
NUC41	89	Y
NUC42	91	Y
NUC43	93	Zr
NUC44	95	Zr
NUC45	97	Mo
NUC46	99	Mo
NUC47	101	Tc
NUC48	103	Tc
NUC49	105	Ru
NUC50	107	Ru
NUC51	109	Rh
NUC52	111	Rh
NUC53	113	Pd
NUC54	115	Pd
NUC55	117	Ag
NUC56	119	Ag
NUC57	121	Cd
NUC58	123	Cd
NUC59	125	In
NUC60	127	In
NUC61	129	Sn
NUC62	131	Sn
NUC63	133	Pb
NUC64	135	Pb
NUC65	137	Pb
NUC66	139	Pb
NUC67	141	Bi
NUC68	143	Bi
NUC69	145	Po
NUC70	147	Po
NUC71	149	At
NUC72	151	At
NUC73	153	Bk
NUC74	155	Bk
NUC75	157	Cf
NUC76	159	Cf
NUC77	161	Cf
NUC78	163	Cf
NUC79	165	Es
NUC80	167	Es
NUC81	169	Es
NUC82	171	Es
NUC83	173	Fm
NUC84	175	Fm
NUC85	177	Fm
NUC86	179	Fm
NUC87	181	Mn
NUC88	183	Mn
NUC89	185	Mn
NUC90	187	Mn
NUC91	189	Mn
NUC92	191	Mn
NUC93	193	Mn
NUC94	195	Mn
NUC95	197	Mn
NUC96	199	Mn
NUC97	201	Mn
NUC98	203	Mn
NUC99	205	Mn
NUC100	207	Mn

15N ≤ 17μs (90% formamide sample) 样品不对

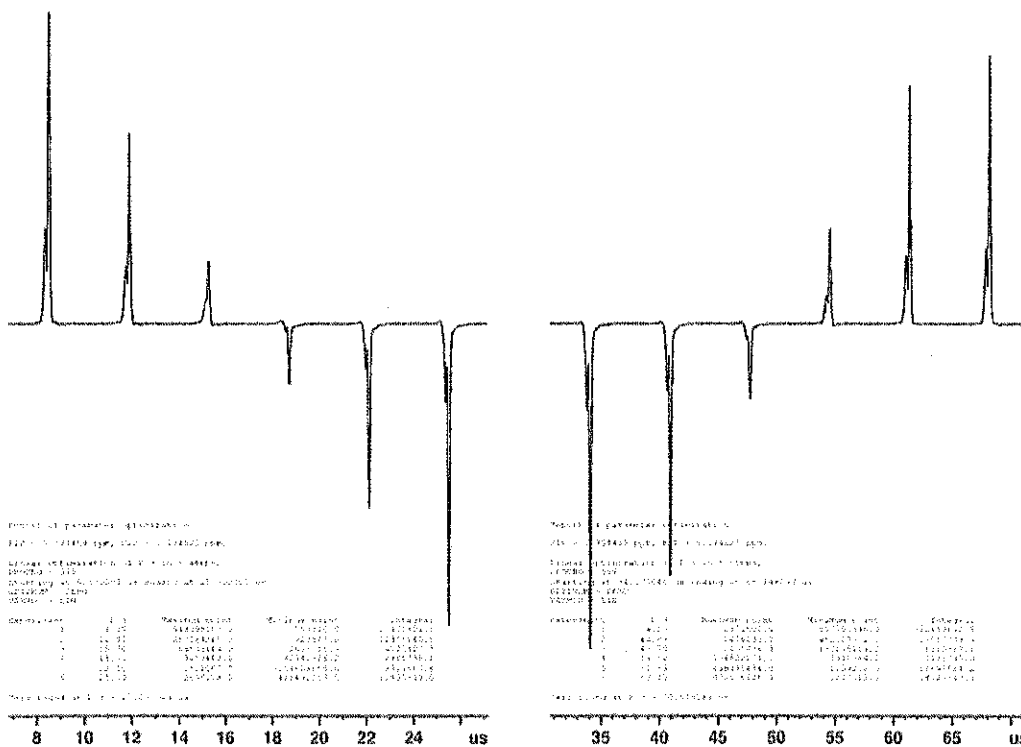
NMR TEST ACCEPTANCE *** System: AV NEO (400.13 MHz) *** TopSpin 4.5.0
 Probe: Z163739_1221 PI HR-BBO400S1-BBF/H/D-5.0-Z SP *** Sample Depth: 20 mm
 Sample: 100 mM Urea-15N, 100 mM Methanol-13C in Dimethyl Sulfoxide-D6 (Z10283)
 Indirect P90 15N pulse calibration (NPT_1H_p90determination2_15n, spin rate 0 Hz)
 Result: [90] = 17.0 us @ 94.7 W [270] = 30.7 us ==> [PDelay = 3*90 - 270] = 0.4 us
 ATTENTION: Updated PROSCL Tables with [17.0 us @ 95.1 W]
 Deviation from pulse target value (= 17.0 us): 0.2%

P90 15N pulse [achieved/rated]: @ 94.7 W [17.0 us <= 17.0 us] <pass>



Bruker BioSpin

NPT_1H_p90determination2_15n



System: AV NEO (400.13 MHz) *** TopSpin 4.5.0
 Probe: Z163739_1221 PI HR-BBO400S1-BBF/H/D-5.0-Z SP *** Sample Depth: 20 mm
 Sample: 100 mM Urea-15N, 100 mM Methanol-13C in Dimethyl Sulfoxide-D6 (Z10283)
 Indirect P90 15N pulse calibration (NPT_1H_p90determination2_15n, spin rate 0 Hz)
 Result: [90] = 17.0 us @ 94.7 W [270] = 30.7 us ==> [PDelay = 3*90 - 270] = 0.4 us
 ATTENTION: Updated PROSCL Tables with [17.0 us @ 95.1 W]
 Deviation from pulse target value (= 17.0 us): 0.2%

Parameter	Value	Unit
NUC1	15	N
NUC2	13	C
NUC3	1	H
NUC4	16	O
NUC5	17	O
NUC6	19	F
NUC7	23	Na
NUC8	25	Mg
NUC9	27	Al
NUC10	29	Si
NUC11	31	P
NUC12	33	S
NUC13	35	Cl
NUC14	37	Cl
NUC15	39	K
NUC16	41	K
NUC17	43	Ca
NUC18	45	Ca
NUC19	47	Ti
NUC20	49	Ti
NUC21	51	V
NUC22	53	V
NUC23	55	Cr
NUC24	57	Fe
NUC25	59	Fe
NUC26	61	Ni
NUC27	63	Ni
NUC28	65	Cu
NUC29	67	Cu
NUC30	69	Zn
NUC31	71	Zn
NUC32	73	Ga
NUC33	75	Ga
NUC34	77	As
NUC35	79	As
NUC36	81	Sb
NUC37	83	Sb
NUC38	85	Te
NUC39	87	Te
NUC40	89	Y
NUC41	91	Y
NUC42	93	Zr
NUC43	95	Zr
NUC44	97	Mo
NUC45	99	Mo
NUC46	101	Tc
NUC47	103	Tc
NUC48	105	Ru
NUC49	107	Ru
NUC50	109	Rh
NUC51	111	Rh
NUC52	113	Pd
NUC53	115	Pd
NUC54	117	Ag
NUC55	119	Ag
NUC56	121	Cd
NUC57	123	Cd
NUC58	125	In
NUC59	127	In
NUC60	129	Sn
NUC61	131	Sn
NUC62	133	Pb
NUC63	135	Pb
NUC64	137	Pb
NUC65	139	Pb
NUC66	141	Bi
NUC67	143	Bi
NUC68	145	Po
NUC69	147	Po
NUC70	149	At
NUC71	151	At
NUC72	153	Bk
NUC73	155	Bk
NUC74	157	Cf
NUC75	159	Cf
NUC76	161	Cf
NUC77	163	Cf
NUC78	165	Es
NUC79	167	Es
NUC80	169	Es
NUC81	171	Es
NUC82	173	Fm
NUC83	175	Fm
NUC84	177	Fm
NUC85	179	Fm
NUC86	181	Mn
NUC87	183	Mn
NUC88	185	Mn
NUC89	187	Mn
NUC90	189	Mn
NUC91	191	Mn
NUC92	193	Mn
NUC93	195	Mn
NUC94	197	Mn
NUC95	199	Mn
NUC96	201	Mn
NUC97	203	Mn
NUC98	205	Mn
NUC99	207	Mn
NUC100	209	Mn

7.8 加Z-方向梯度场线圈 ≥ 50 高斯/cm

Z-Gradient

Gradient strength	≥ 0.5 T/m	(max current 10 A) ²
Gradient recovery time	≤ 100 μ s	(95% signal amplitude) ^{2,3}

7.9 探头变温范围: -150°C-+150°C (低温实验可另配低温附件)

Edit Properties of probe Z163739_1221

Properties of probe Z163739_1221

Probe Identity	PGMSZ [G/cmA]	5.05	Highest gradient strength in Z direction
Product Info	PGMCZ [A]	10	Maximum permissible current in Z direction
Gradient System Parameters	<ul style="list-style-type: none"> Temperature Parameters 		
Temperature Parameters	<ul style="list-style-type: none"> PHPTYP PHEATTEMPMIN [°C] PHEATTEMPMAX [°C] PHTPMIN [°C] PHTPMAX [°C] 		
Coil Parameters	<ul style="list-style-type: none"> Temperature Controlling Gas Flow 		
Sample Parameters	<ul style="list-style-type: none"> PGFVTGASFLOWREC [l/h] PGFVTGASFLOWMAX [l/h] PGFVTGASFLOWMIN [l/h] 		
Peak Powers	<ul style="list-style-type: none"> Protection Air 		
Available Plugins	<ul style="list-style-type: none"> PHCATYP PHCAMIN [°C] PHCAMAX [°C] 		
90 deg. Pulses	<ul style="list-style-type: none"> Coil Parameters 		
	PHCGASC	air	Gas compensation

Undo Print Close

7.10 探头全自动调谐和匹配附件: 必须配备能调所有观测核的全自动调谐和匹配附件

The probe is fitted with a ²H lock channel. Any nucleus can be fully automatically selected and optimally tuned and matched (ATM).

7.11 探头具备观测¹H去偶后的¹⁹F图谱功能

SPECTRUM PROCPARS **ACQPARS** TITLE PULSEPROG PEAKS INTEGRALS SAMPLE STRUCTURE PLOT FID ACQU

Return to IconNMR C Probe: PI HR-BBO400S1-BBF/HID-5.0-Z 9P

Parameter	Value	Description
Width	SW (ppm): 241.4836	Spectral width
	SWH (Hz): 90909.091	Spectral width
Nucleus	AQ (sec): 0.7208860	Acquisition time
Receiver	FIDRES (Hz): 1.387163	Fid resolution
Durations	FW (Hz): 240000000.000	Filter width
Nucleus 1		
Power	NUC1: 10F <input type="button" value="Edit"/>	Observe nucleus
Program	O1 (Hz): -37649.84	Transmitter frequency offset
Probe	O1P (ppm): -100.000	Transmitter frequency offset
	SFO1 (MHz): 376.4607164	Transmitter frequency
	BF1 (MHz): 376.4603682	Basic transmitter frequency
Nucleus 2		
Lock	NUC2: 1H <input type="button" value="Edit"/>	2nd nucleus
Automation	O2 (Hz): 1600.52	Frequency offset of 2nd nucleus
	O2P (ppm): 4.000	Frequency offset of 2nd nucleus
Miscellaneous	SFO2 (MHz): 400.1316005	Frequency of 2nd nucleus
User	BF2 (MHz): 400.1300000	Basic frequency of 2nd nucleus
Routing		
Nucleus 3		

8 工作站及数据输出终端

8.1 数据处理工作站配置不低于：CPU：3.8GHz 四核处理器，内存：16GB，硬盘：2 TB，显示器：24英寸宽屏液晶彩色显示器，配备无线网卡、DVD刻录机

System > About

DESKTOP-G806KH6
HP Z2 Tower G9 Workstation Desktop PC

[Rename this PC](#)

① Device specifications

[Copy](#)

Device name	DESKTOP-G806KH6
Processor	Intel(R) Core(TM) i7-14700K 3.40 GHz
Installed RAM	32.0 GB (31.7 GB usable)
Device ID	20498366-F121-4543-8EBF-78E6048E35FF
Product ID	00355-62306-52025-AAOEM
System type	64-bit operating system, x64-based processor
Pen and touch	No pen or touch input is available for this display

Devices and drives



Local Disk (C:)

663 GB free of 707 GB

New Volume (D:)

1.16 TB free of 1.17 TB



DVD RW Drive (H:)

DVD



英特尔® 酷睿™ i7 处理器 14700K

33M 高速缓存, 高达 5.6 GHz

加入对比

规格

订购与合规

兼容的产品

下载

支持

基本要素

CPU 规格

补充信息

内存规格

GPU Specifications

扩展选项

封装规格

先进技术

安全性与可信性

基本要素

产品集

代号名称

垂直市场

处理器编号 ①

光刻 ②

建议客户价格 ③

CPU 规格

内核数 ④

Performance-core (性能核) 数

Efficient-core (能效核) 数

总线线程数 ⑤

最大睿频频率 ⑥

英特尔® 睿频加速 Max 技术 3.0 频率* ⑦

Performance-core (性能核) 最大睿频频率 ⑧

Efficient-core (能效核) 最大睿频频率 ⑨

Performance-core (性能核) 基本频率 ⑩

Efficient-core (能效核) 基本频率 ⑪

Intel® Core™ i7 Processors (14th gen)

Products formerly Raptor Lake

Desktop

I7-14700K

Intel 7

\$409.00-\$419.00

20

8

12

28

5.6 GHz

5.6 GHz

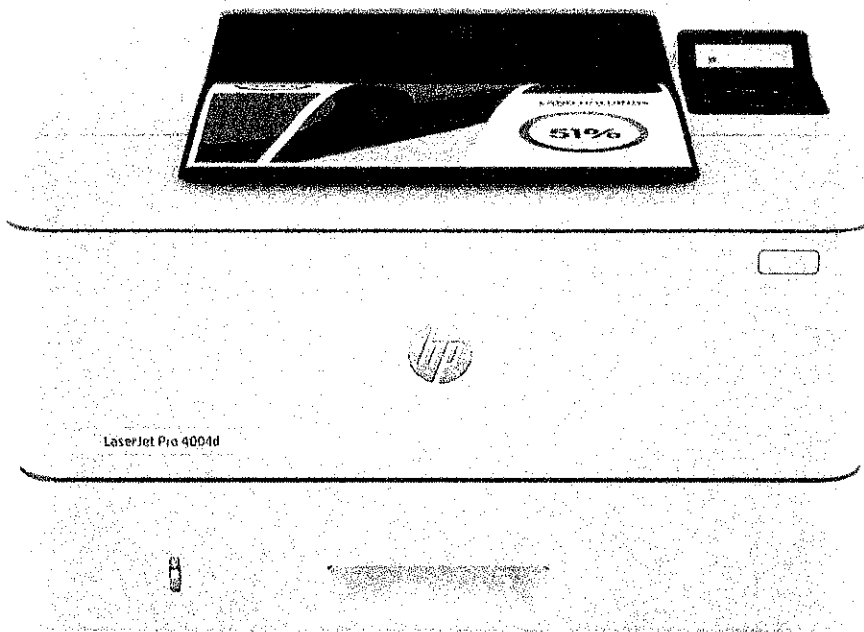
5.5 GHz

4.3 GHz

3.4 GHz

2.5 GHz

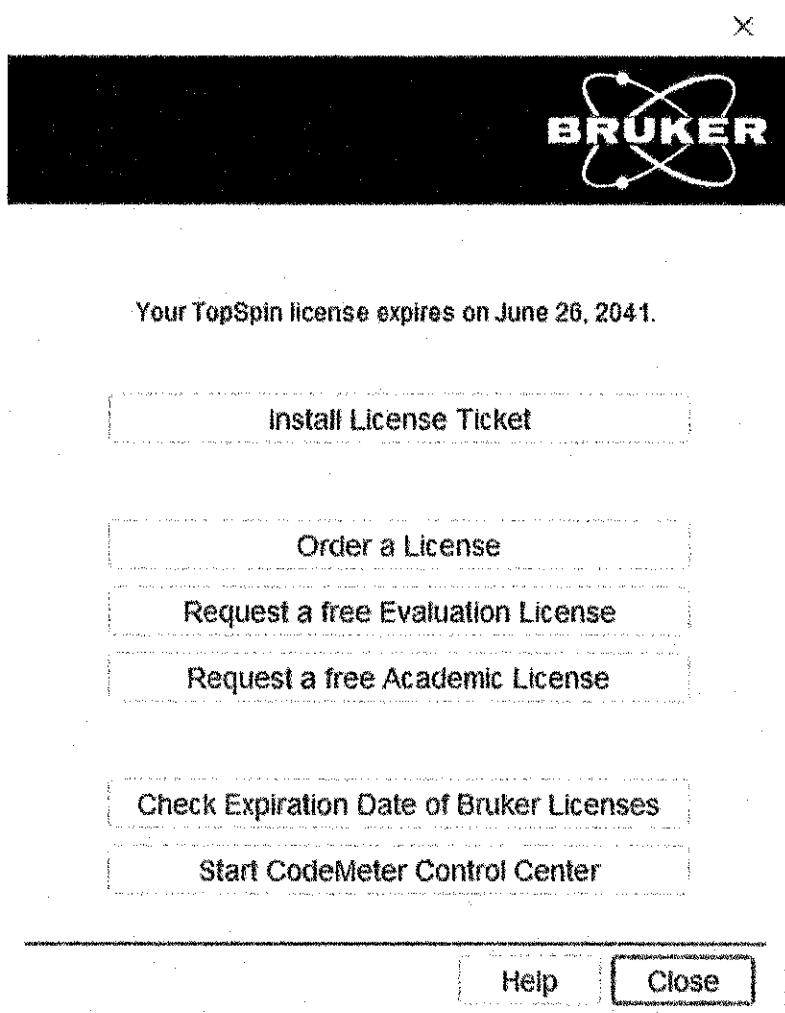
8.2数据输出终端：打印速度≥30张/分钟，支持黑白双面



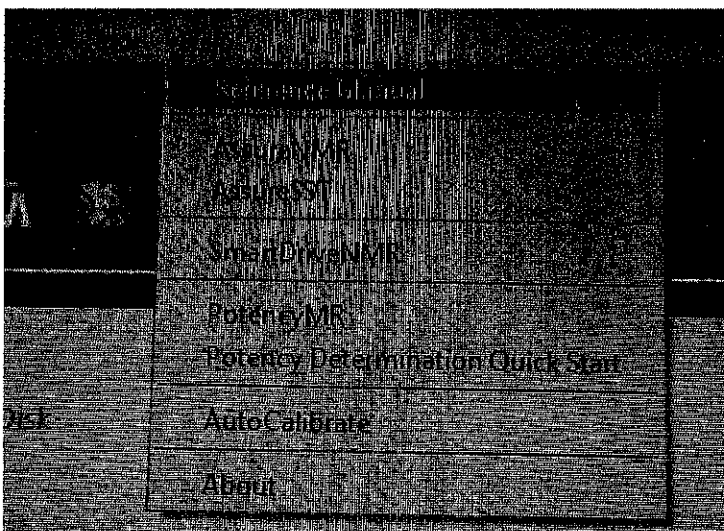
- A4 黑白激光打印机,适合商用
- 打印,双面打印
- 打印速度高达 40页/分钟(黑白)

9. NMR软件

9.1 快速多维采样处理软件许可证一个



9.2 在线服务软件：包括在线使用帮助、NMR技术指导、实验手册等



User Manual

IconNMR

Automation Interface

002

Innovation with Integrity

NMR



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9.3 脉冲程序模拟软件一套

Pulse program

Spin system

Delay list

Pulse list

Offset list

Counter list

Duration of last experiment

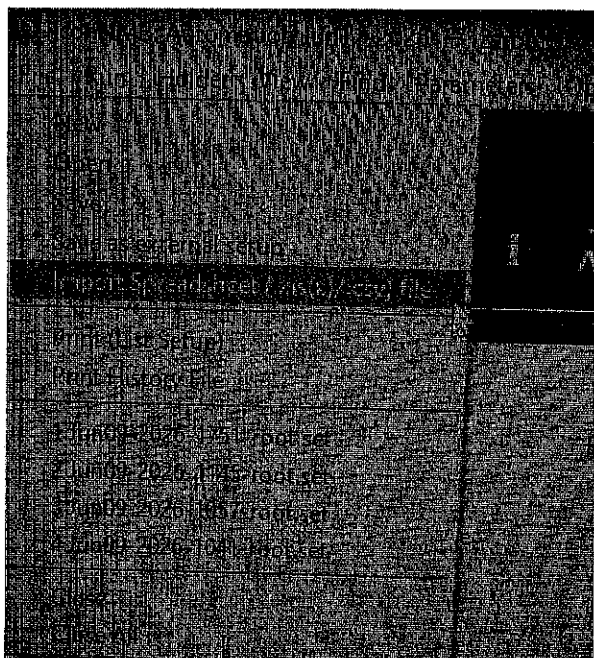
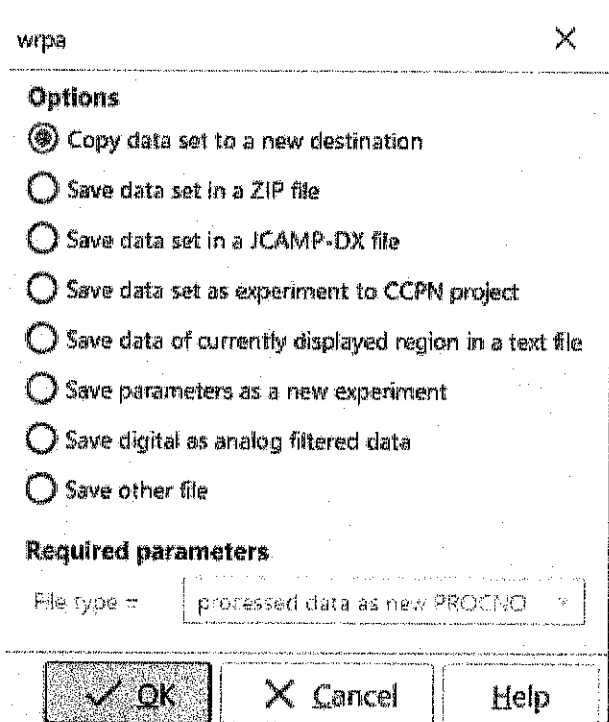
9.4 核磁数据处理软件许可证一个

The screenshot shows the CodeMeter WebAdmin interface. The main content area displays license information for Bruker Biospin GmbH, including a list of licenses with columns for Product Code, Name, Unit Counter, Valid Until, License Quantity, and Feature Flag.

Product Code	Name	Unit Counter	Valid Until	License Quantity	Feature Flag
1010101000	BBIO_FRAMEWORK_1	n/a	2041-06-26 19:27:40	1	n/a
1010101000	BBIO_FRAMEWORK_1	n/a	2041-06-26 19:27:40	1	n/a
1011001000	TOPSPIN_AOQU	n/a	2041-06-26 19:27:40	1	n/a
1011013000	TOPSPIN3	n/a	2041-06-26 19:27:40	1	n/a
1011014000	TOPSPIN4	n/a	2041-06-26 19:27:40	1	n/a
1011014000	TOPSPIN4	n/a	2041-06-26 19:27:40	1	n/a
1011015000	TOPSPIN5	n/a	2041-06-26 19:27:40	1	n/a
1011150100	SMP_STRUCELU	n/a	2027-06-05 19:27:40	1	n/a
1011150200	SMP_STRUCELU_CLASSROOM	n/a	2041-06-26 19:27:40	1	n/a
1011200100	PROTEIN_DYNAMICS	n/a	2027-06-05 19:27:40	1	n/a
1011210100	REACTION_MONITORING_1	n/a	2027-06-05 19:27:40	1	n/a
1021021000	TOPSPIN_1D	n/a	2041-06-26 19:27:40	1	n/a
1021022000	TOPSPIN_1D	n/a	2041-06-26 19:27:40	1	n/a
1021023000	TOPSPIN_2D	n/a	2041-06-26 19:27:40	1	n/a
1021024000	TOPSPIN_2D	n/a	2041-06-26 19:27:40	1	n/a
1021041000	TOPSPIN_CONNECTAPI	n/a	2041-06-26 19:27:40	1	n/a
1021080000	TOPSPIN_ACADEMIA	n/a	2041-06-26 19:27:40	1	n/a
1021091000	TOPSPIN_DEVCLASS_NEO	n/a	2041-06-26 19:27:40	1	n/a
1021110100	XWINPLOT	n/a	2041-06-26 19:27:40	1	n/a
1021110100	XWINPLOT	n/a	2041-06-26 19:27:40	1	n/a
1021120100	NMRSIM	n/a	2041-06-26 19:27:40	1	n/a
1021120100	NMRSIM	n/a	2041-06-26 19:27:40	1	n/a

Current Server: localhost (127.0.0.1) WebAdmin Version: 8.10

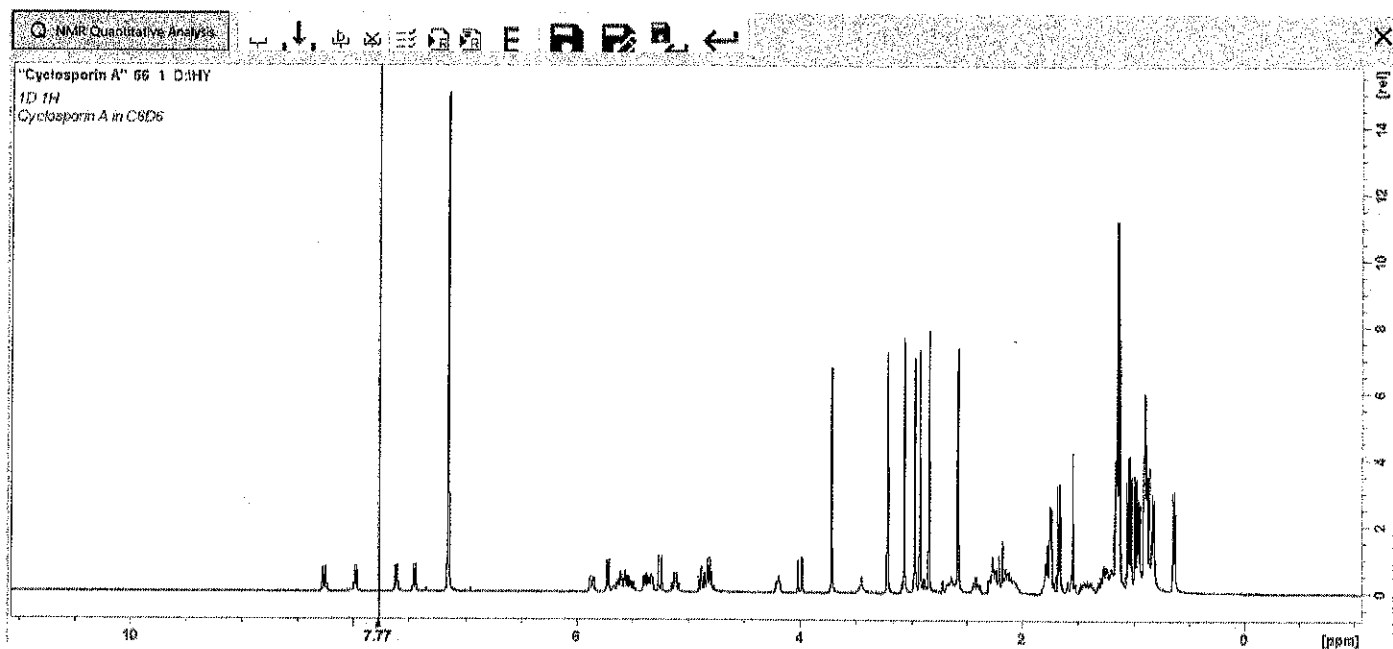
9.5 实验数据（原始数据及分析结果）可存为通用格式，能被其它NMR软件读取，并能导入



9.6 用于自动和远程谱仪状况检查，故障诊断和排除软件

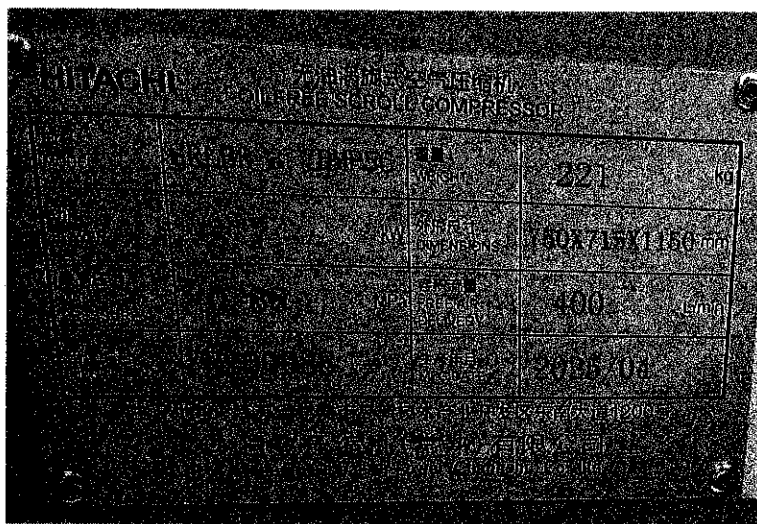
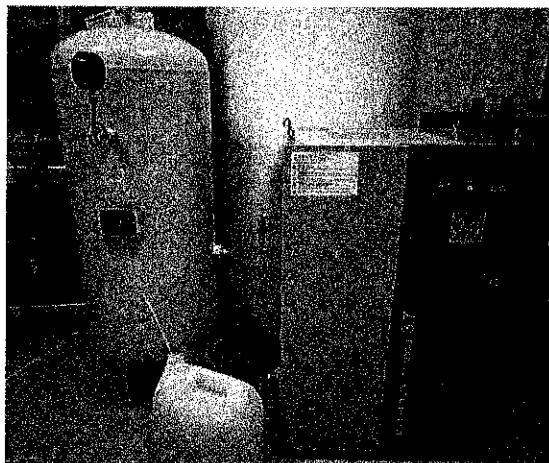
POWCHK	Probe Temperature	AutoDiagnose	Spooler	BSMS status
✓	298.0 K	Sending Status	queued: 0 delayed: 0 cron: 1	Autoshim Lock
	On <input checked="" type="checkbox"/> Reg. State: <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		

9.7 一维谱定量分析



10空压机：带过滤器、储气罐和干燥器；产气量：400 L/min；压力可调范围包括：4~8.5 bar；噪音值≤50 dB；带自动排水功能。

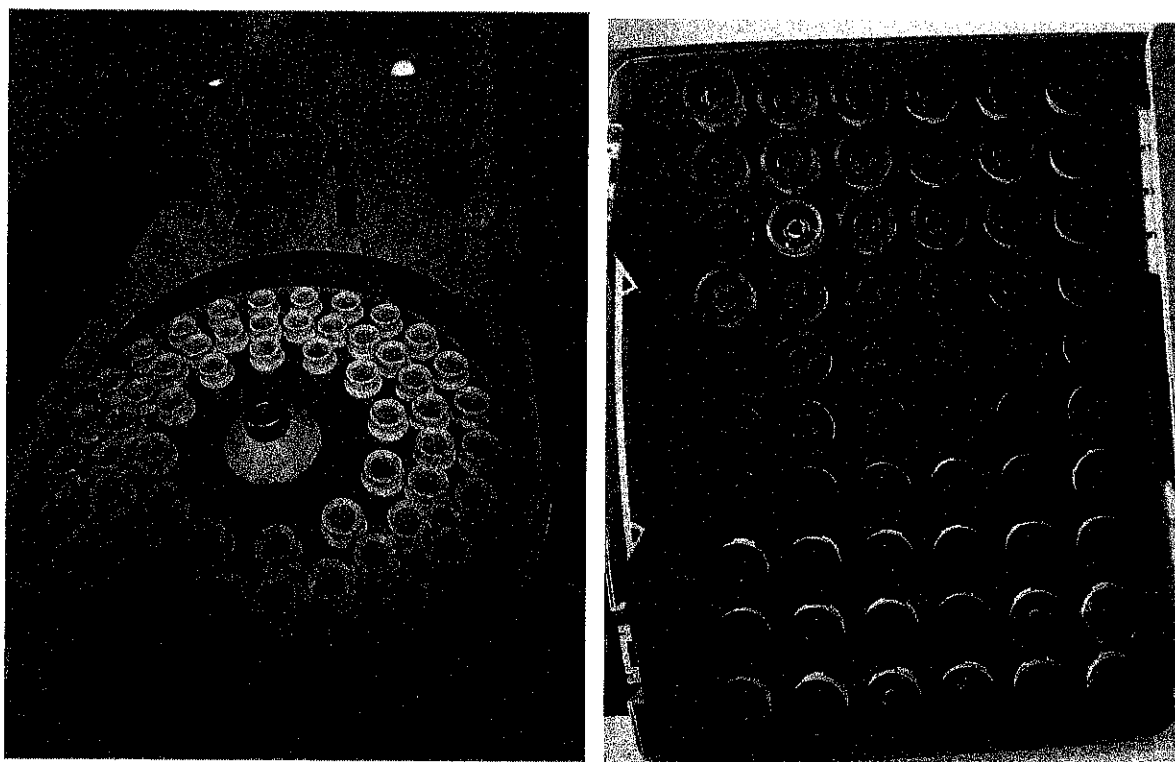
4~8.5 bar为0.4~0.85Mpa。



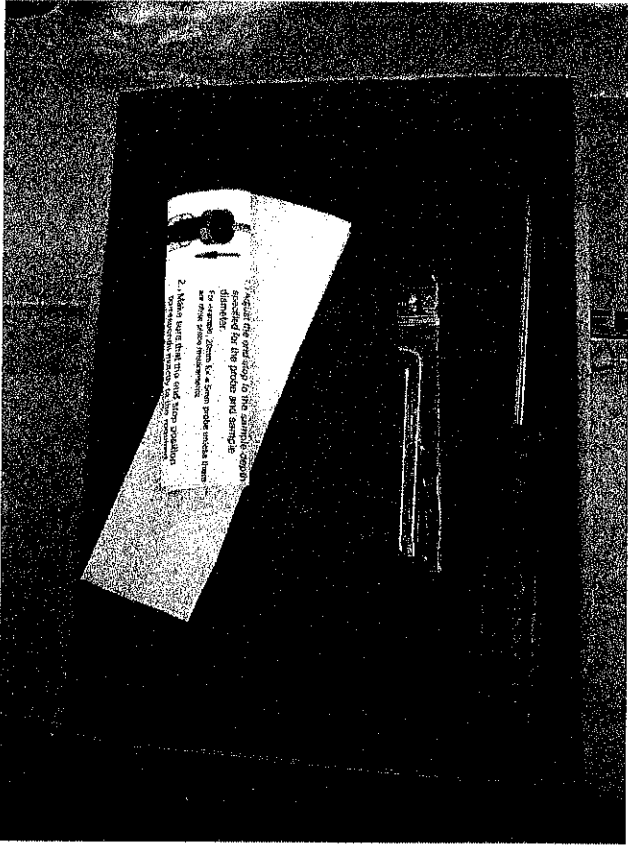
规格		标准规格			
型号		SRL-1.5DMP5C	SRL-2.2DMP5C	SRL-3.7DMP5C	SRL-5.5DMP5C
电机输出功率	kW	1.5	2.2	3.7	5.5
最高压力	MPa	0.85			
控制压力	MPa	0.4~0.85			
排出空气量	L/min	160	240	400	600
控制方式		压力开关式			
环境温度	°C	5~40			
排出口的露点温度	°C	压力下 15 以下 (30°C环境)			
电源电压·频率	V·Hz	三相 380 V·50Hz			
产品额定电流	A	5.4	7.0	9.8	12.4
空气干燥器	型号	HD-371C		HD-551C	
	电源电压·频率	三相 380 V·50Hz			
	冷冻机额定输出功率	350			
	冷媒/冷媒装入量	R-407C/200g			
空气排出口	Rc3/8				
储气罐容量	L	18		24	
外形尺寸 (宽×深×高)	mm	680x640x1,050		750x715x1,150	
质量	kg	153	171	221	245
噪音	dB [A]	45	48	49	50

11 附件、零配件及消耗品(包括专用工具)

11.1 60位自动进样器及相同数量的液体样品转子（放取样不用爬梯子）



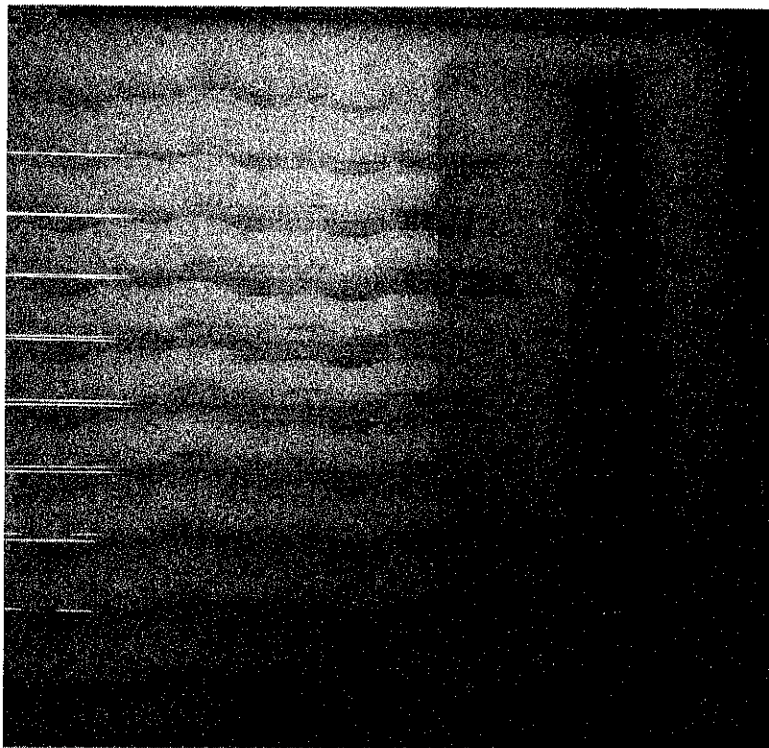
11.2 随机必备的标准附件专用工具(在基本报价内)



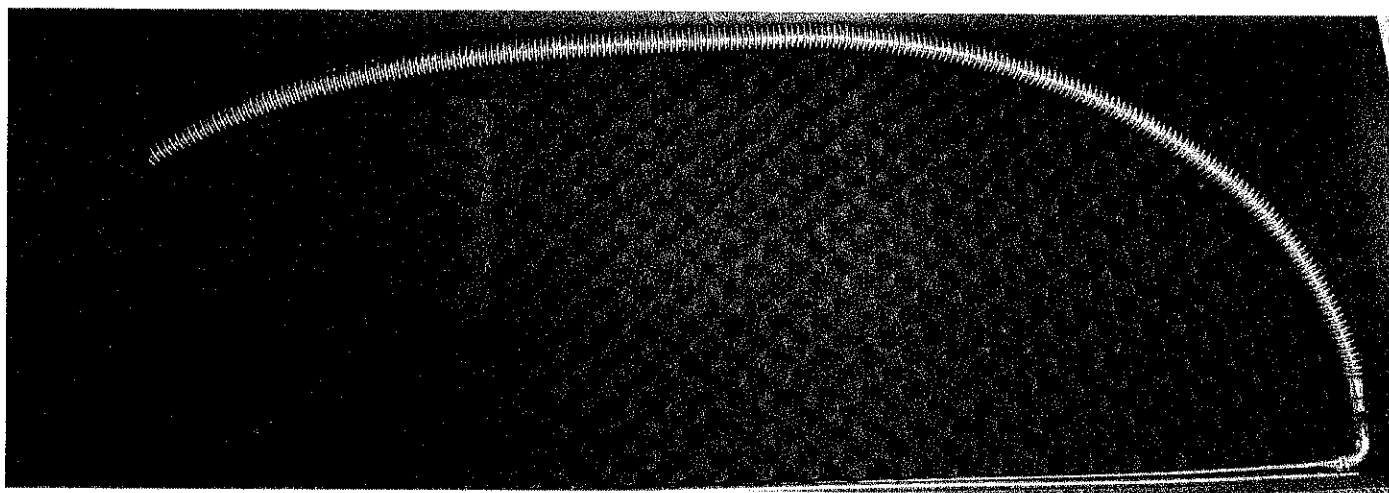
11.3 谱仪维修工具1套



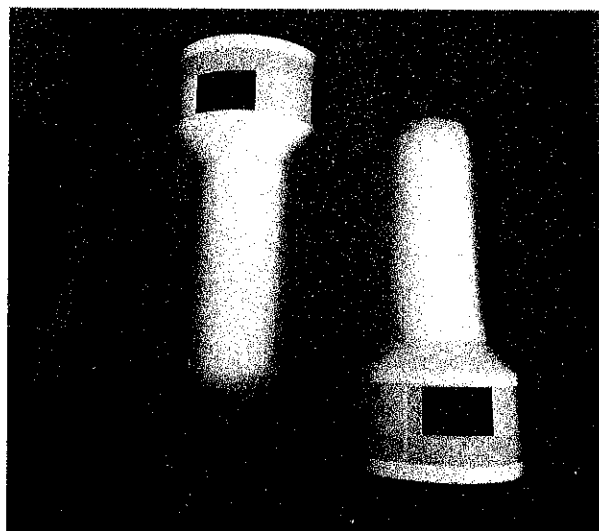
11.4 标准样品 1套



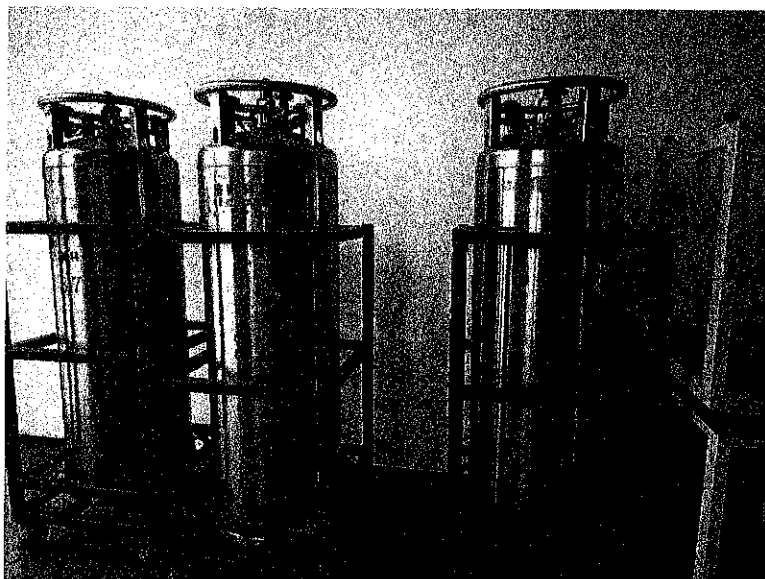
11.5 超导磁体用液氮真空输液管1个



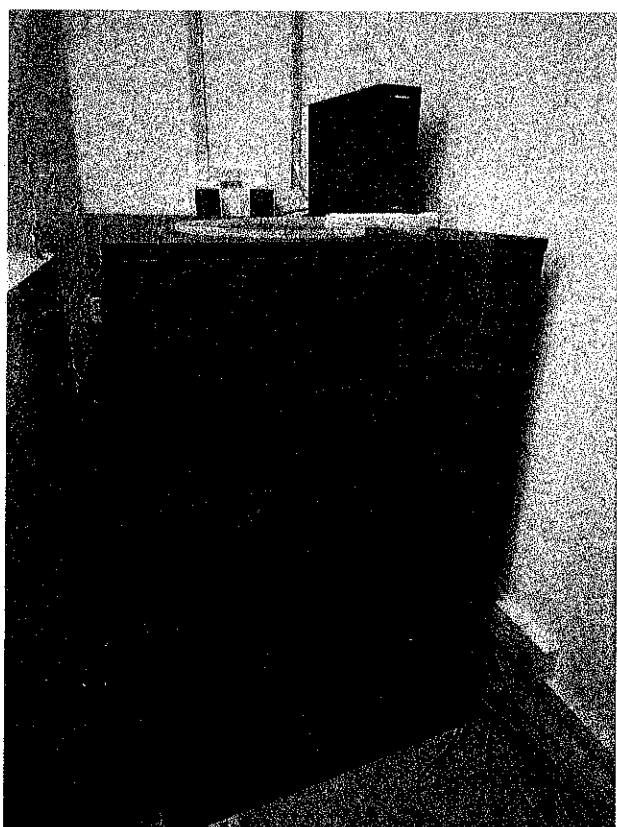
11.6 高温陶瓷转子1个



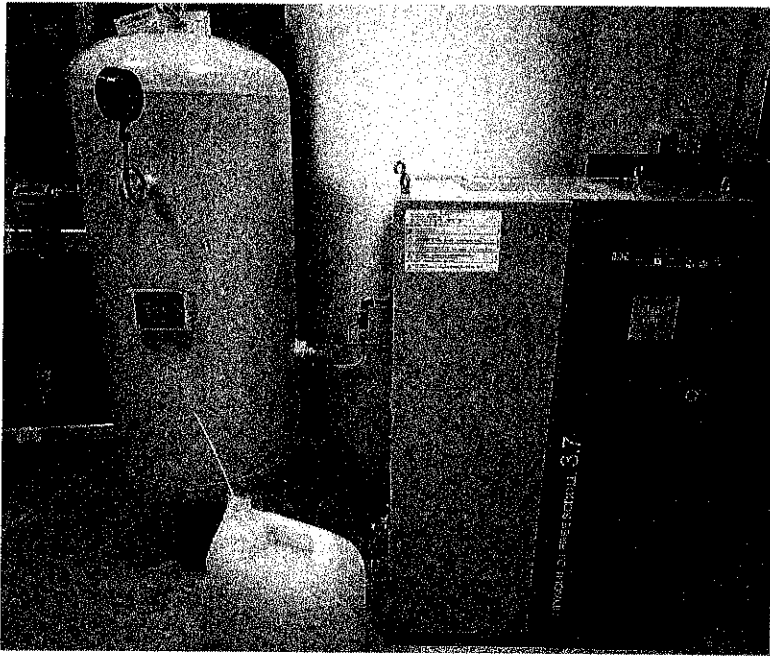
11.7 仪器安装时，提供所需正常状态下的液氮，液氮，氦气，氮气。



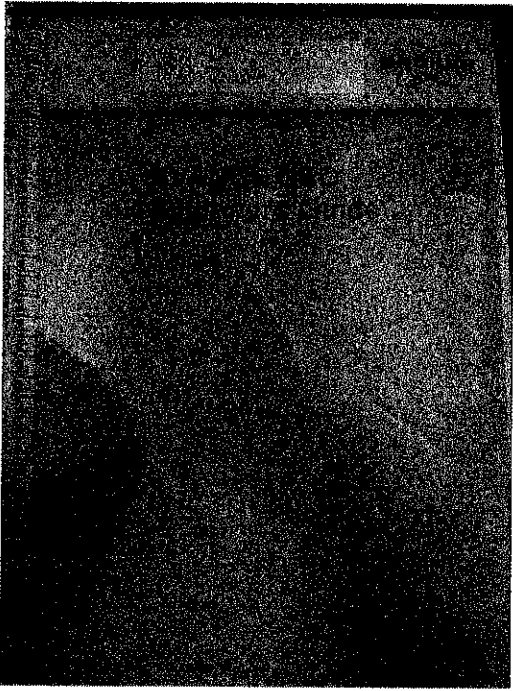
11.8 UPS电源，3KVA，续航时间2小时



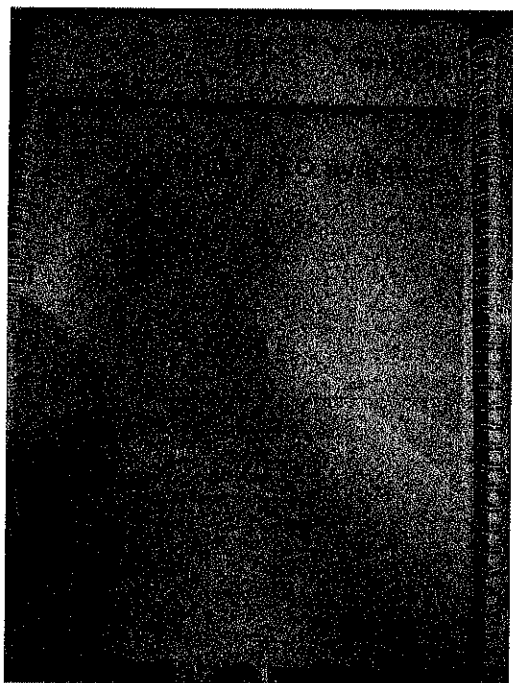
11.9 空压机1套





11.10 主机、各功能部件的基本结构和使用说明书1套



11.11 软件的操作手册和使用说明书1套



大型仪器设备外观和安全性验收报告

仪器名称	400M 核磁共振波谱仪	
外观完整性	无明显划痕、变形、损坏	已确认
	设备铭牌、规格型号、序列号、出厂日期等标识内容清晰	已确认
	配件齐全，包括使用说明书、保修卡、证书等	已确认，保修依照合同执行
安全性	仪器设备应符合国家相关安全标准和要求，包括但不限于电气安全、防爆安全、辐射安全等	已确认
	电源接地可靠、电源线无破损	已确认
	仪器设备使用环境符合相关要求，包括但不限于温度、湿度、通风等	已确认
	仪器设备安装稳定	已确认
	是否配备备用电源及配备备用电源可用时长	配备备用电源， 续航 2h
设备管理员	(签名)  日期: 2026年5月15日	
院属单位	负责人 (签名)  单位 (公章) 日期: 2026年5月15日 