 Discovery Labs	STANDARD OPERATING PROCEDURE			
	SOP No.:	SOP-QC-044-02	Effective Date:	01.01.2017
	Supersedes:	SOP-QC-044-01	Next Review Date:	31.12.2019
	Department:	Quality Control	Page:	1 of 19
TITLE: OPERATION AND CALIBRATION OF FTIR				

1.0 PURPOSE:

To provide procedure For Operation and calibration of Carry 630 FTIR.

2.0 SCOPE:

This procedure is applicable to the FTIR following in Quality Control laboratory at Discovery.

Make : Agilent Technologies

Model : Carry 630

Instrument ID No. : DIPL/QC/INS/FTIR/001.

3.0 RESPONSIBILITY:

3.1 Analyst-QC shall be responsible to follow this SOP.

3.2 Head-QC/Designee shall be responsible for ensuring implementation of this SOP.

3.3 Head-QA/Designee shall be responsible for monitoring overall compliance of this SOP.

4.0 DEFINITIONS:

Nil


5.0 PROCEDURE:

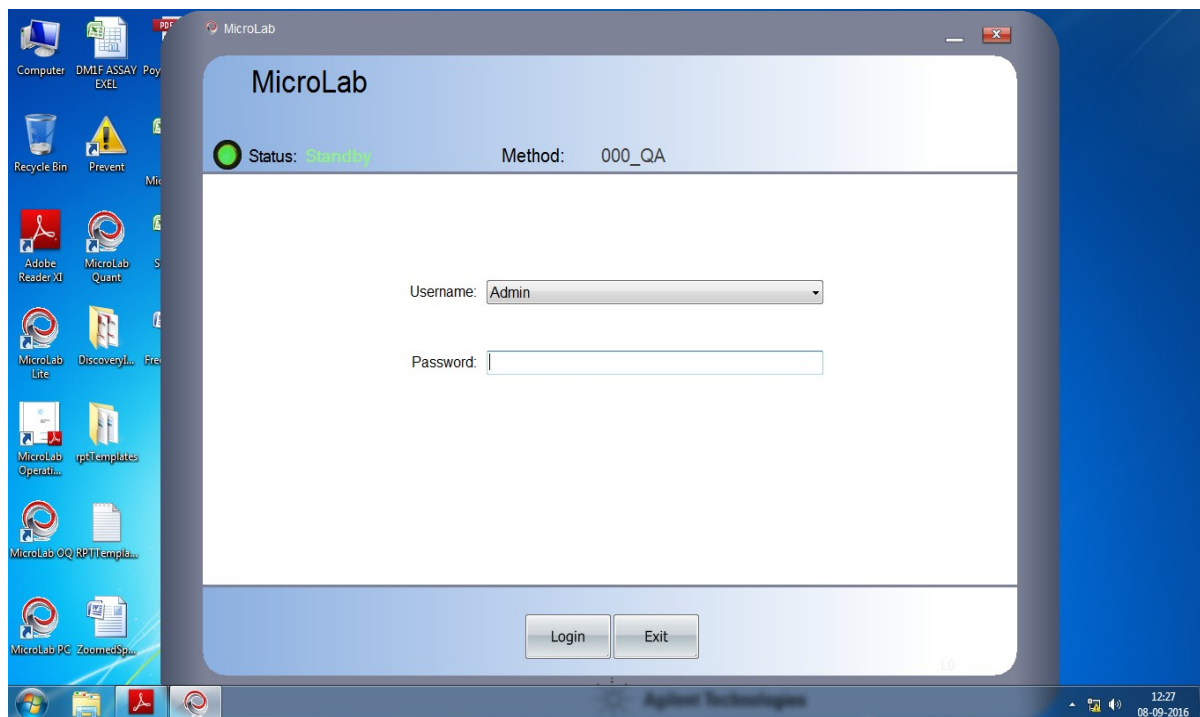
5.1 Operation:

Check that the instrument is clean and free from dust, if not clean with a soft cloth duster.

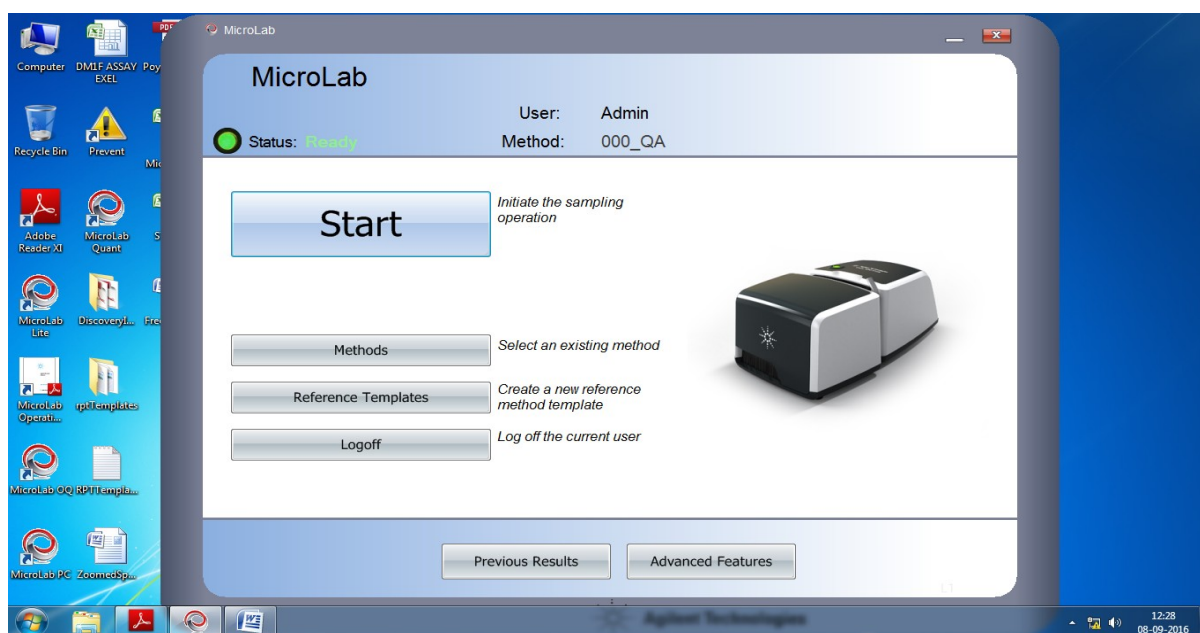
Double click on Mircolab pc.

	Prepared by	Reviewed by	Checked by
Sign & Date			
Name	A.Navya	S.Prasad	Ch.Mahendar Reddy
Department	Quality Control	Quality Control	Quality Assurance

 Discovery Labs	STANDARD OPERATING PROCEDURE		
	SOP No.:	SOP-QC-044-02	Effective Date: 01.01.2017
	Supersedes:	SOP-QC-044-01	Next Review Date: 31.12.2019
	Department:	Quality Control	Page: 2 of 19
TITLE: OPERATION AND CALIBRATION OF FTIR			




Enter the password the above screen will appear



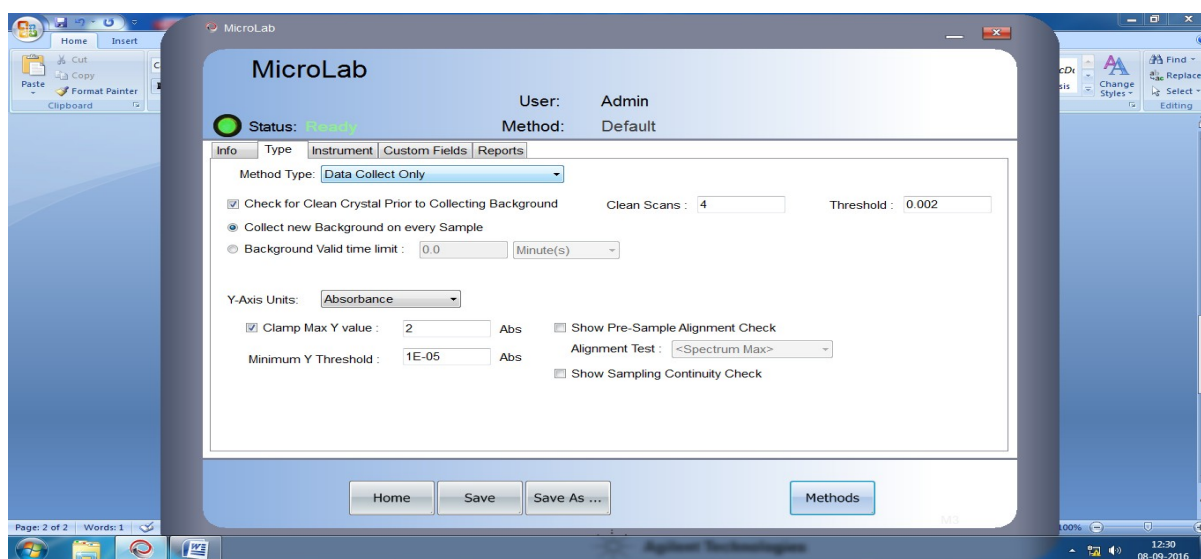
	Prepared by	Reviewed by	Checked by
Sign & Date			
Name	A.Navya	S.Prasad	Ch.Mahendar Reddy
Department	Quality Control	Quality Control	Quality Assurance

QA001-FM139-00

 Discovery Labs	STANDARD OPERATING PROCEDURE			
	SOP No.:	SOP-QC-044-02	Effective Date:	01.01.2017
	Supersedes:	SOP-QC-044-01	Next Review Date:	31.12.2019
	Department:	Quality Control	Page:	3 of 19
TITLE: OPERATION AND CALIBRATION OF FTIR				


5.2 How to create data collect

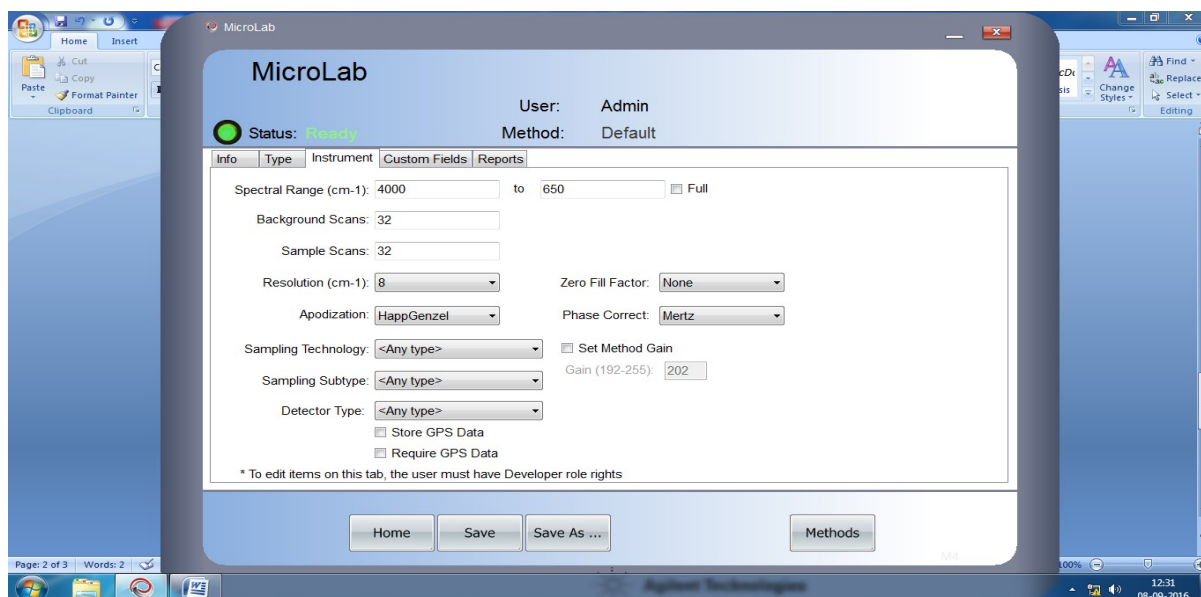
Double click on method and select default method → Select type Method type → Data collect only → and select Y axis units → Transmittance



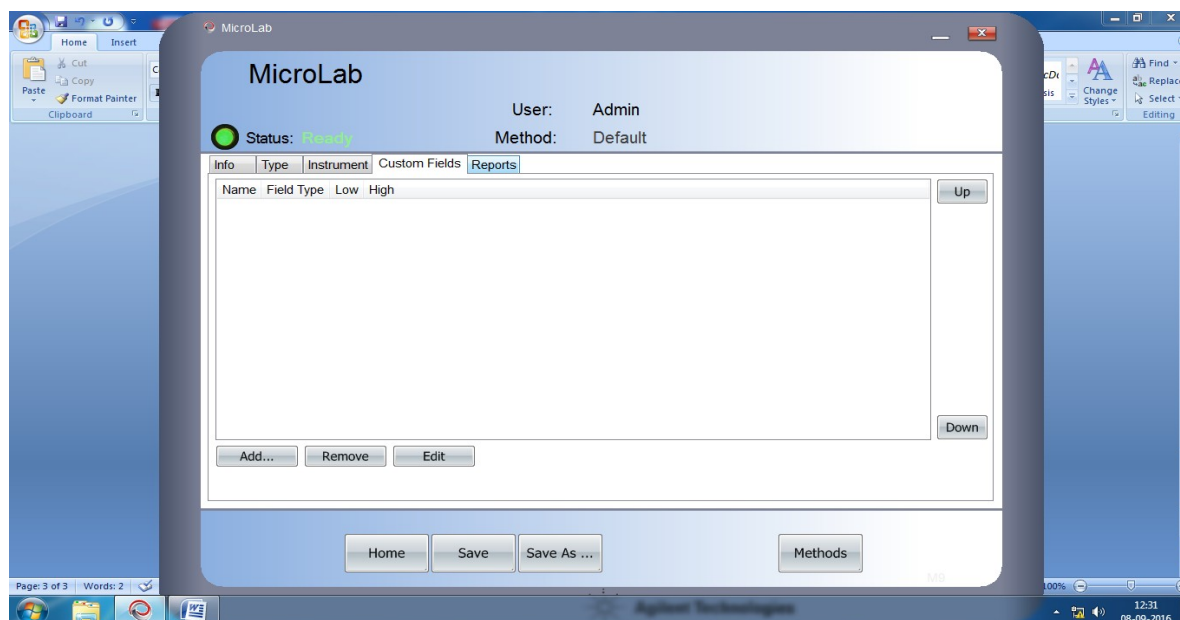
Select Instrument give required range → Select range → Spectral range → (3800-650) → Back ground scans → by default (32)

	Prepared by	Reviewed by	Checked by
Sign & Date			
Name	A.Navya	S.Prasad	Ch.Mahendar Reddy
Department	Quality Control	Quality Control	Quality Assurance

 Discovery Labs	STANDARD OPERATING PROCEDURE			
	SOP No.:	SOP-QC-044-02	Effective Date:	01.01.2017
	Supersedes:	SOP-QC-044-01	Next Review Date:	31.12.2019
	Department:	Quality Control	Page:	4 of 19
TITLE: OPERATION AND CALIBRATION OF FTIR				




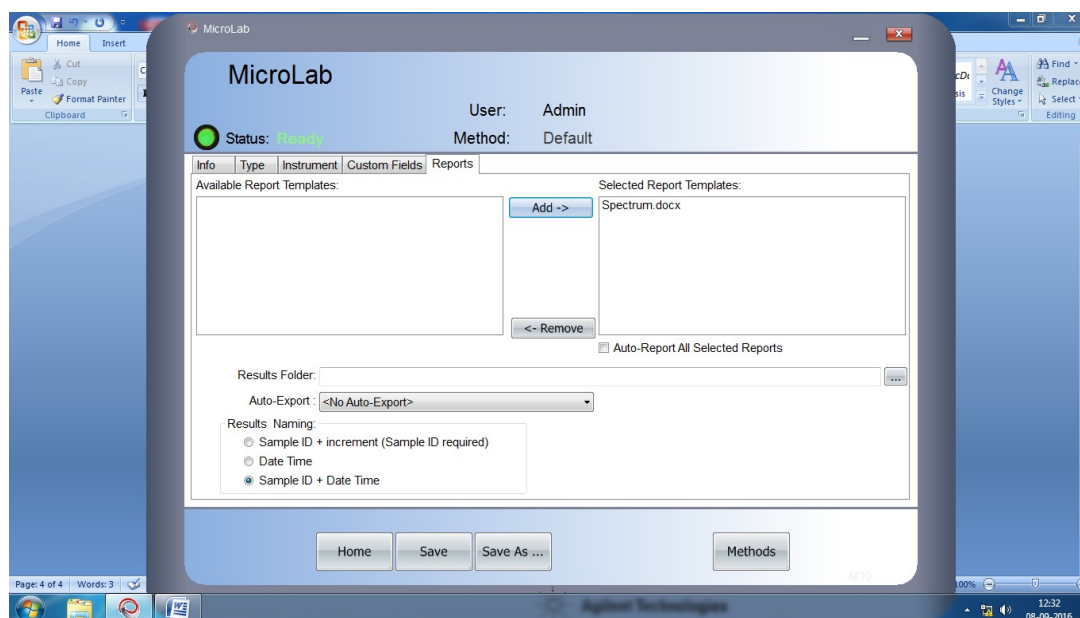
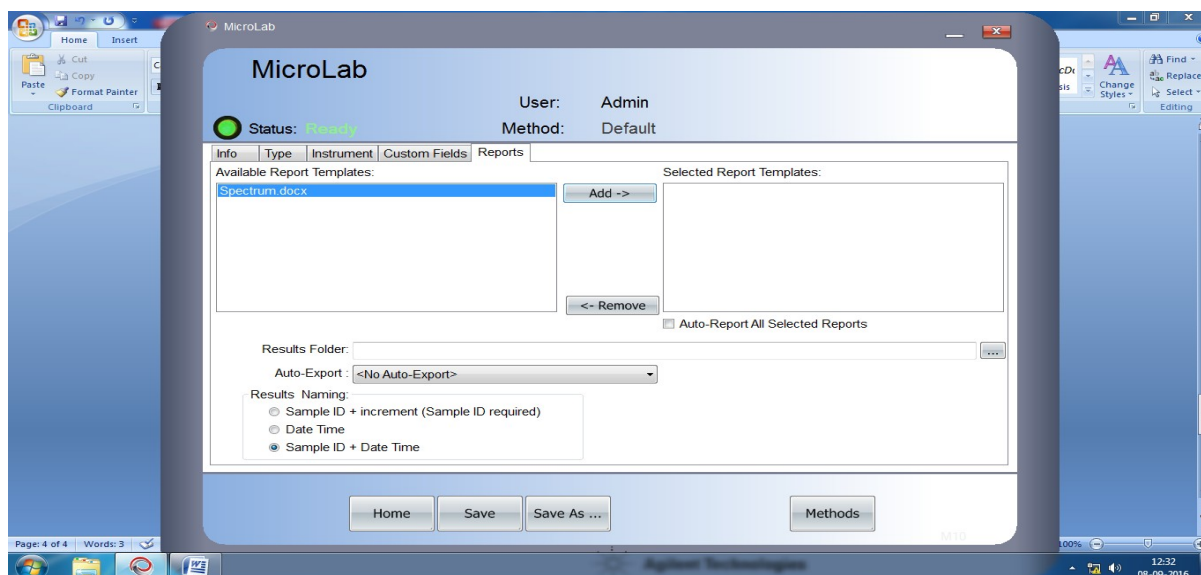
→ Select custom filed is not required.



→ Select report template add the spectrum left to right side.


	Prepared by	Reviewed by	Checked by
Sign & Date			
Name	A.Navya	S.Prasad	Ch.Mahendar Reddy
Department	Quality Control	Quality Control	Quality Assurance

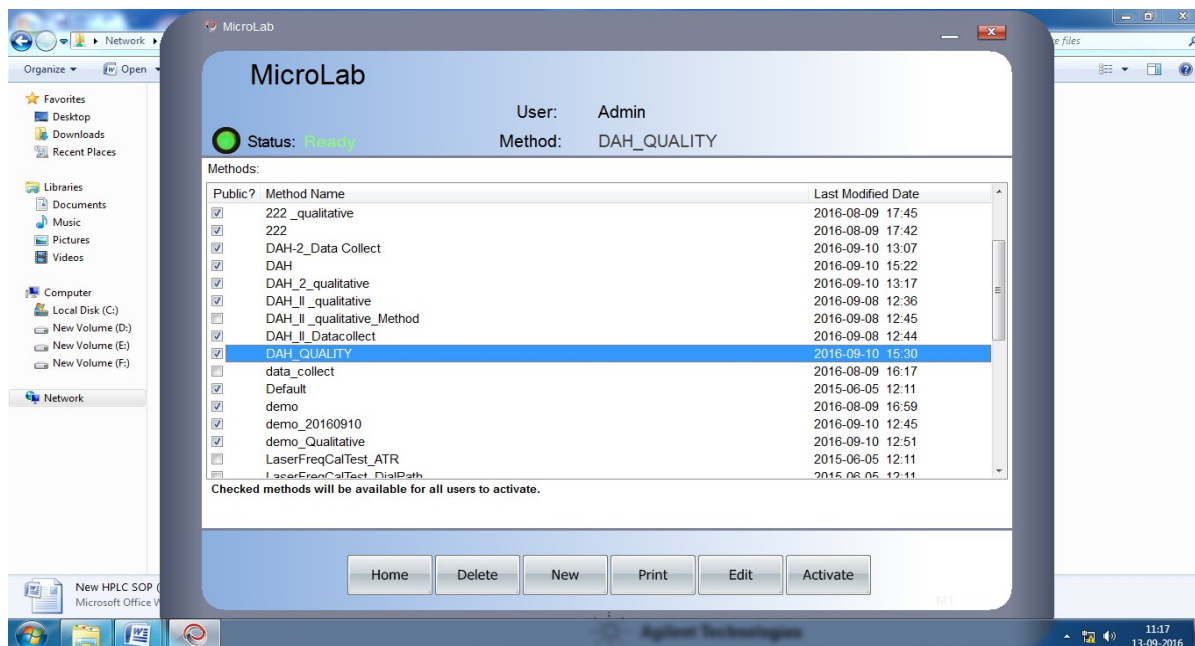
 Discovery Labs	STANDARD OPERATING PROCEDURE			
	SOP No.:	SOP-QC-044-02	Effective Date:	01.01.2017
	Supersedes:	SOP-QC-044-01	Next Review Date:	31.12.2019
	Department:	Quality Control	Page:	5 of 19
TITLE: OPERATION AND CALIBRATION OF FTIR				



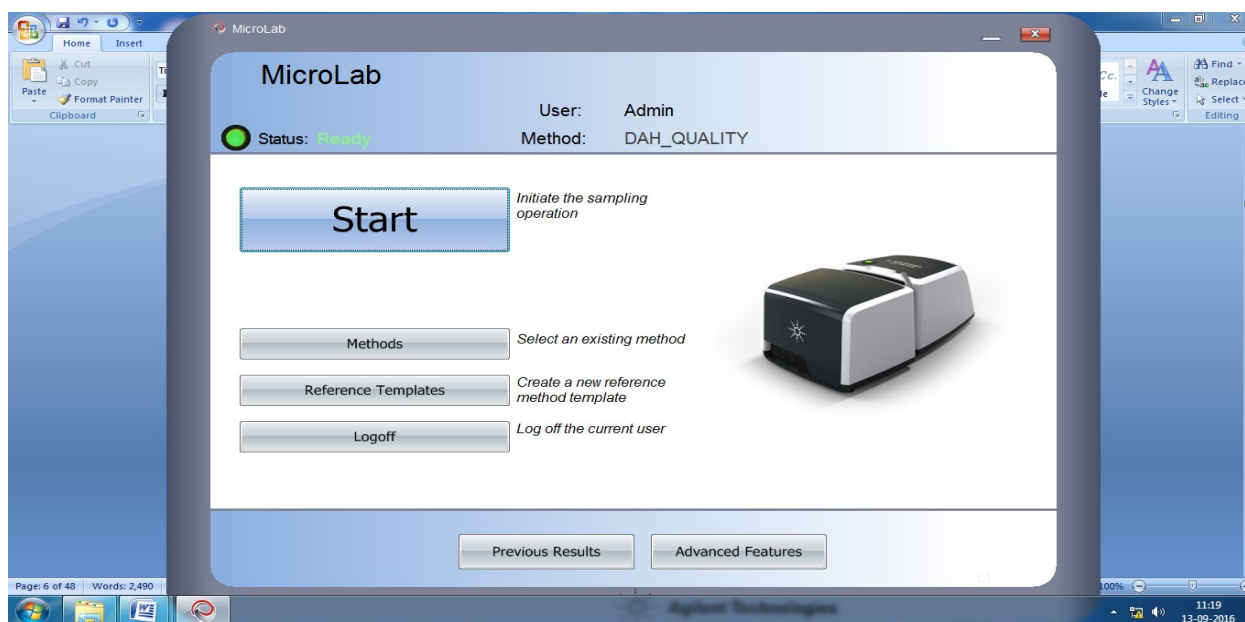
→ Save as the method give the method name, activate the method.

	Prepared by	Reviewed by	Checked by
Sign & Date			
Name	A.Navya	S.Prasad	Ch.Mahendar Reddy
Department	Quality Control	Quality Control	Quality Assurance

 Discovery Labs	STANDARD OPERATING PROCEDURE			
	SOP No.:	SOP-QC-044-02	Effective Date:	01.01.2017
	Supersedes:	SOP-QC-044-01	Next Review Date:	31.12.2019
	Department:	Quality Control	Page:	6 of 19
TITLE: OPERATION AND CALIBRATION OF FTIR				




→ Click the start button




	Prepared by	Reviewed by	Checked by
Sign & Date			
Name	A.Navya	S.Prasad	Ch.Mahendar Reddy
Department	Quality Control	Quality Control	Quality Assurance

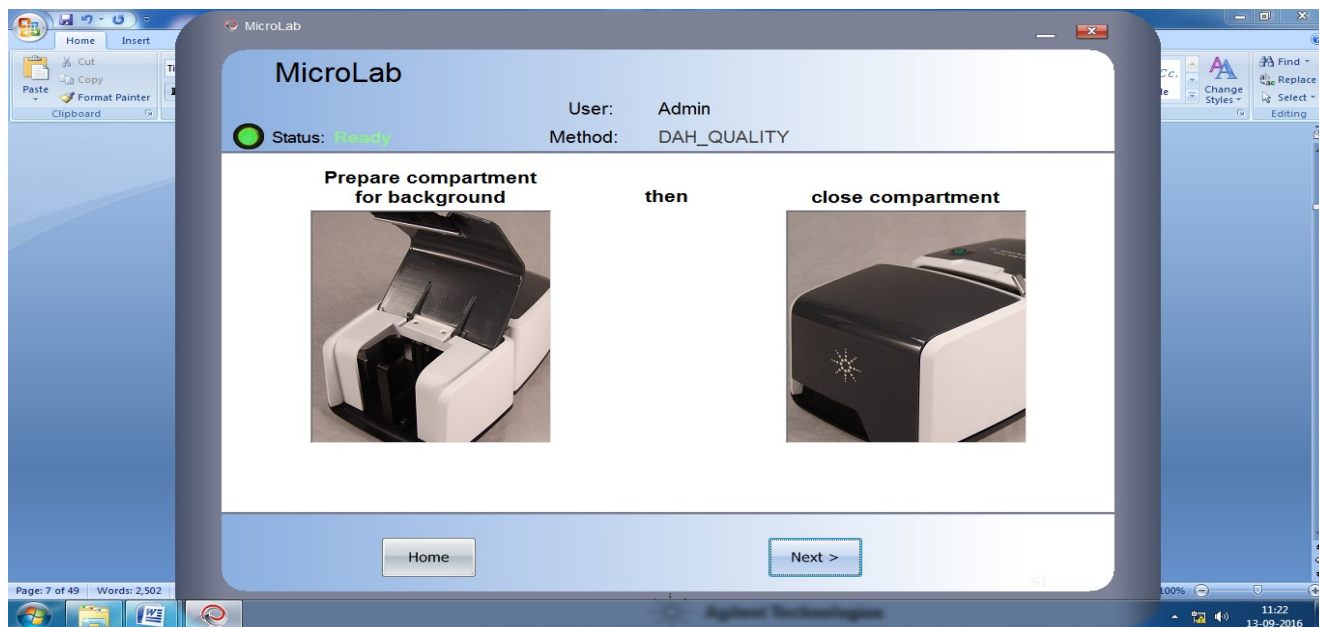
QA001-FM139-00

 Discovery Labs	STANDARD OPERATING PROCEDURE			
	SOP No.:	SOP-QC-044-02	Effective Date:	01.01.2017
	Supersedes:	SOP-QC-044-01	Next Review Date:	31.12.2019
	Department:	Quality Control	Page:	7 of 19
TITLE: OPERATION AND CALIBRATION OF FTIR				

→ Prepare the background by using potassium bromide and click next.


	Prepared by	Reviewed by	Checked by
Sign & Date			
Name	A.Navya	S.Prasad	Ch.Mahendar Reddy
Department	Quality Control	Quality Control	Quality Assurance

 Discovery Labs	STANDARD OPERATING PROCEDURE			
	SOP No.:	SOP-QC-044-02	Effective Date:	01.01.2017
	Supersedes:	SOP-QC-044-01	Next Review Date:	31.12.2019
	Department:	Quality Control	Page:	8 of 19
TITLE: OPERATION AND CALIBRATION OF FTIR				

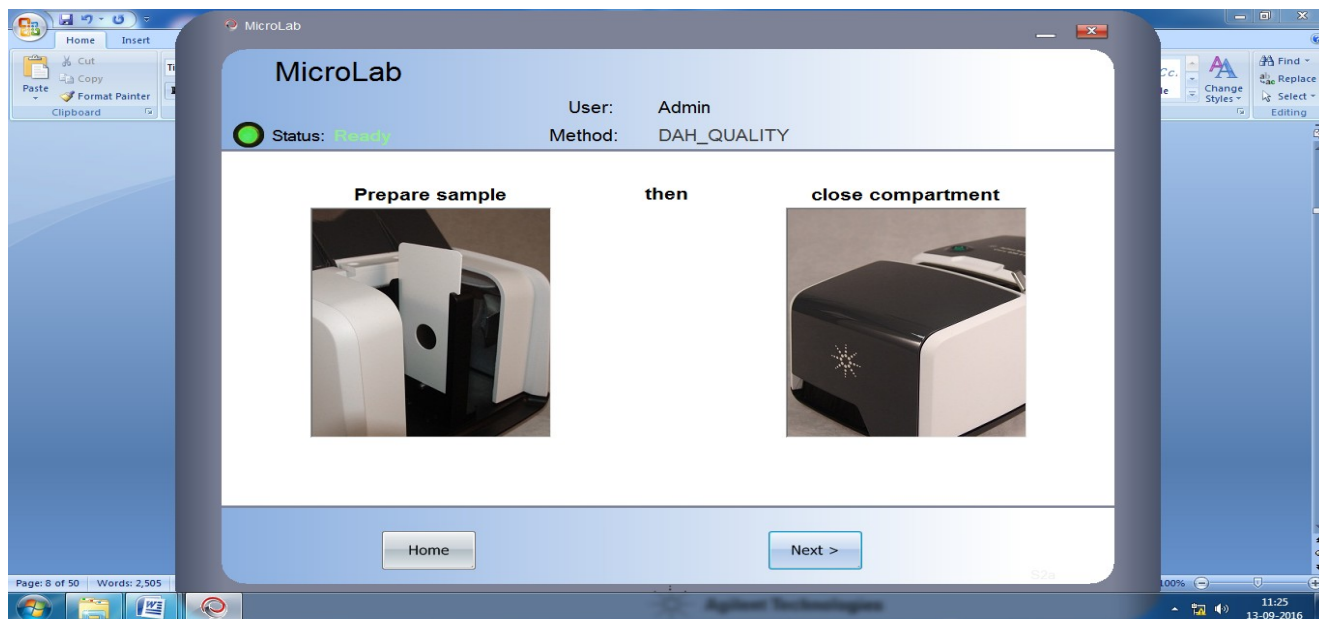


	Prepared by	Reviewed by	Checked by
Sign & Date			
Name	A.Navya	S.Prasad	Ch.Mahendar Reddy
Department	Quality Control	Quality Control	Quality Assurance


QA001-FM139-00

 Discovery Labs	STANDARD OPERATING PROCEDURE			
	SOP No.:	SOP-QC-044-02	Effective Date:	01.01.2017
	Supersedes:	SOP-QC-044-01	Next Review Date:	31.12.2019
	Department:	Quality Control	Page:	9 of 19
TITLE: OPERATION AND CALIBRATION OF FTIR				

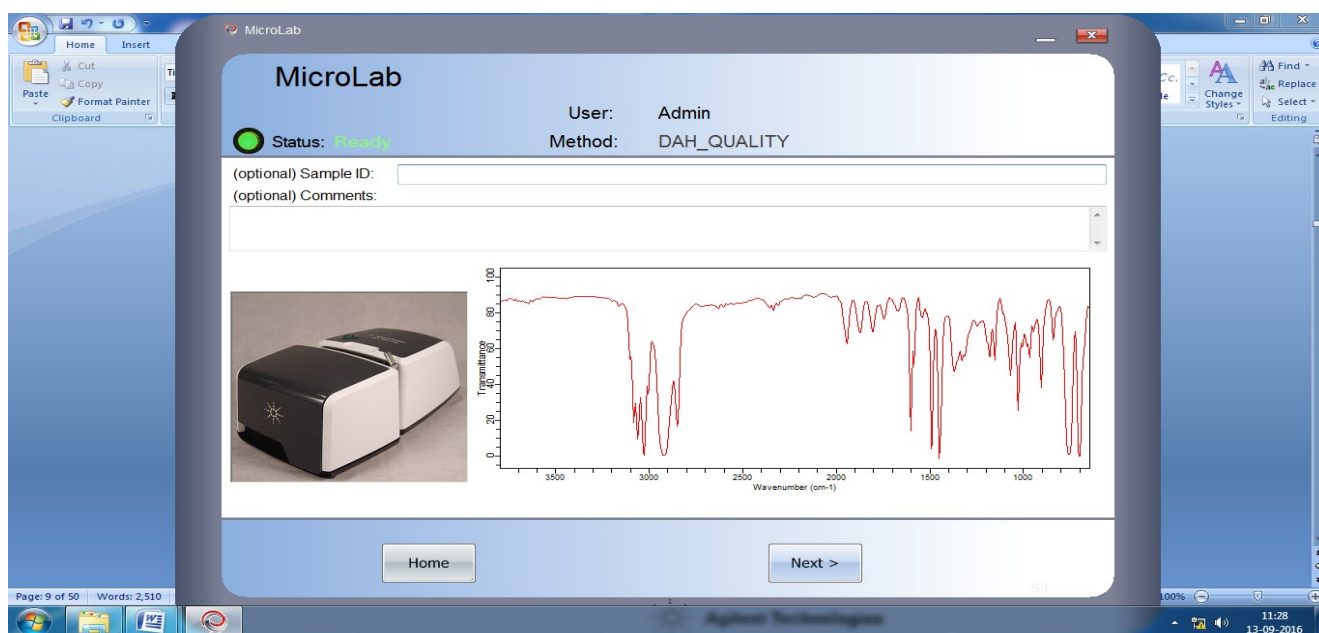
After collecting background prepare the sample and put the holder in sample compartment and click Next button.



	Prepared by	Reviewed by	Checked by
Sign & Date			
Name	A.Navya	S.Prasad	Ch.Mahendar Reddy
Department	Quality Control	Quality Control	Quality Assurance

 Discovery Labs	STANDARD OPERATING PROCEDURE			
	SOP No.:	SOP-QC-044-02	Effective Date:	01.01.2017
	Supersedes:	SOP-QC-044-01	Next Review Date:	31.12.2019
	Department:	Quality Control	Page:	10 of 19
TITLE: OPERATION AND CALIBRATION OF FTIR				

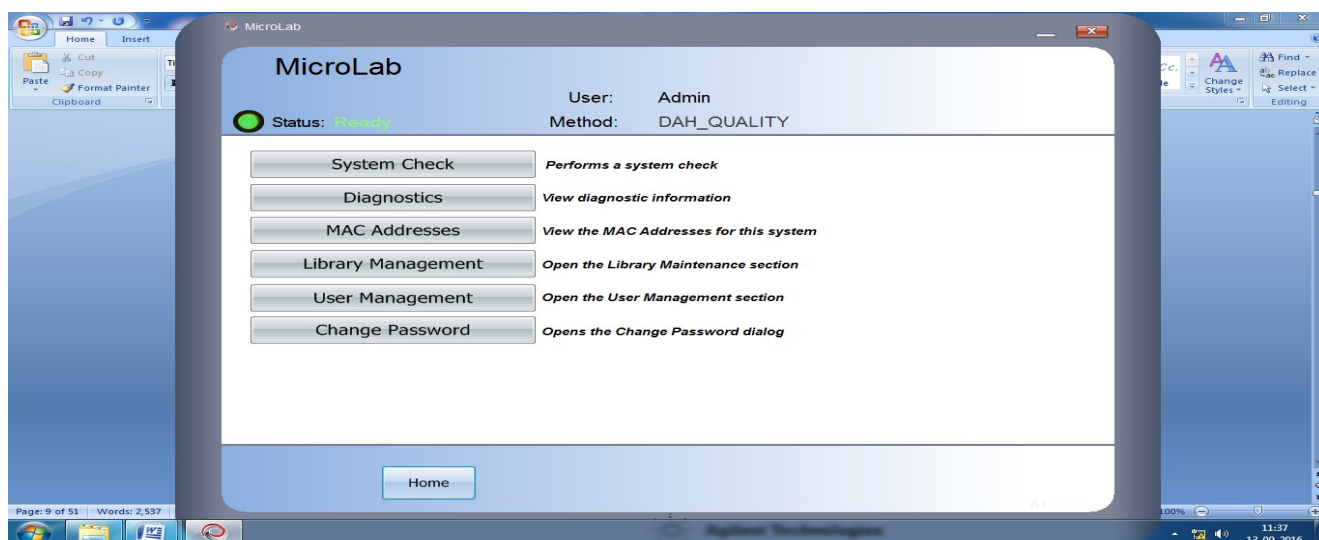
—→ Collect the spectrum and give the sample ID



—→ After collecting the spectrum and record the spectrum


5.3 How to create library

Click the home button and select advance future.

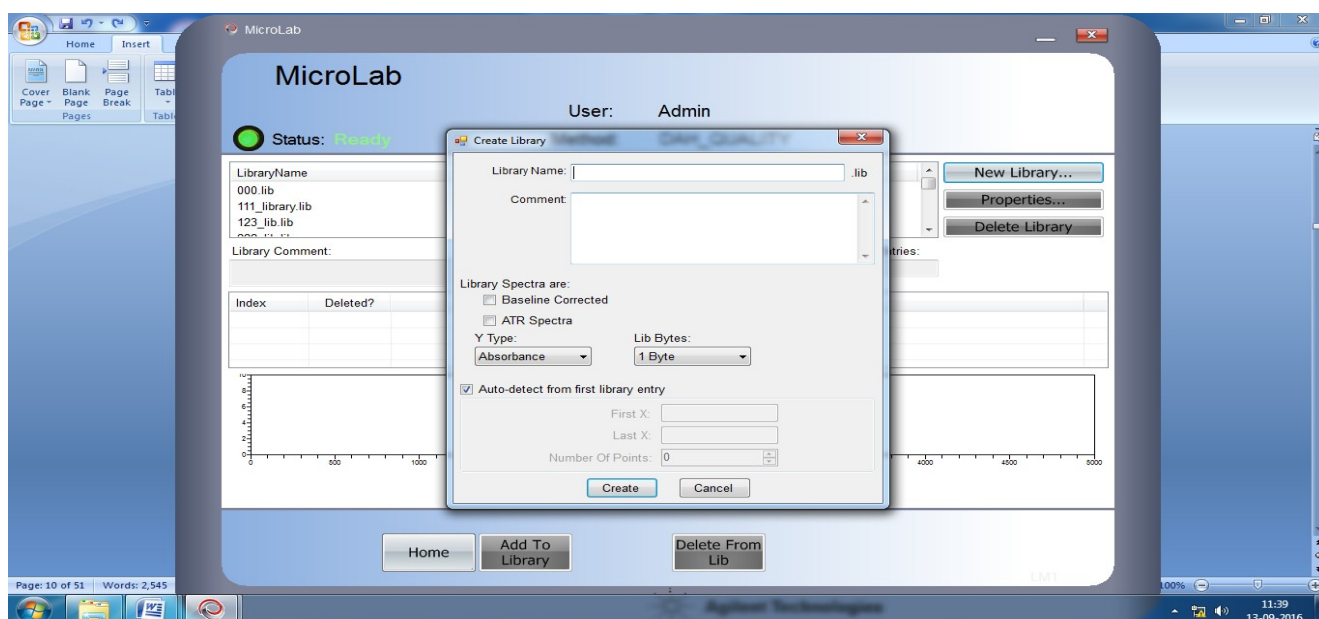


	Prepared by	Reviewed by	Checked by
Sign & Date			
Name	A.Navya	S.Prasad	Ch.Mahendar Reddy
Department	Quality Control	Quality Control	Quality Assurance

QA001-FM139-00


 Discovery Labs	STANDARD OPERATING PROCEDURE			
	SOP No.:	SOP-QC-044-02	Effective Date:	01.01.2017
	Supersedes:	SOP-QC-044-01	Next Review Date:	31.12.2019
	Department:	Quality Control	Page:	11 of 19
TITLE: OPERATION AND CALIBRATION OF FTIR				

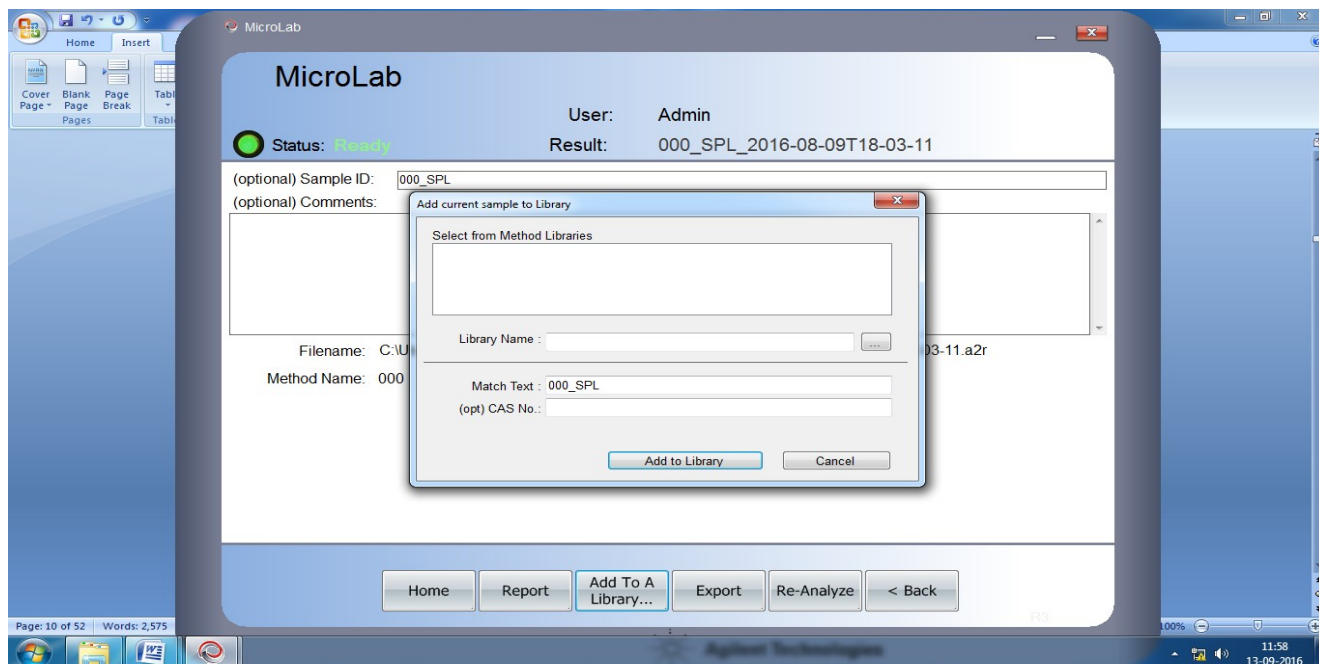
→ and click the library management→select the new library



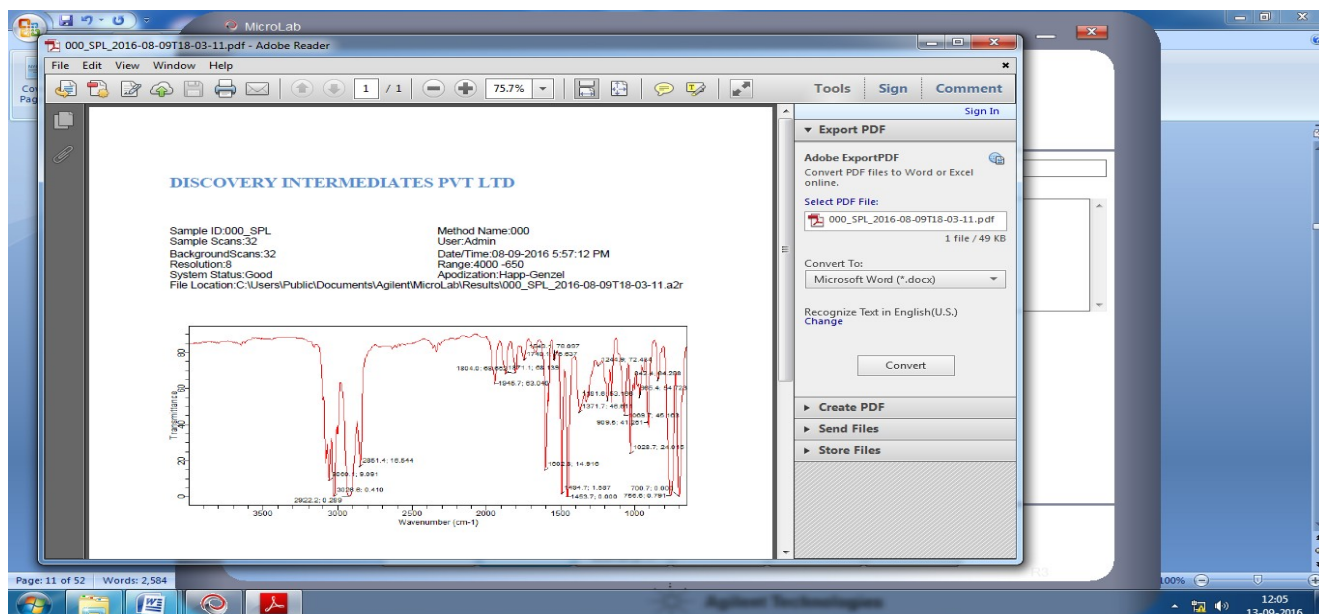
→ Give the library name and select Y Type → select transmittance and click the create new library. Click view button and go to the data handling → click add to library

	Prepared by	Reviewed by	Checked by
Sign & Date			
Name	A.Navya	S.Prasad	Ch.Mahendar Reddy
Department	Quality Control	Quality Control	Quality Assurance

	STANDARD OPERATING PROCEDURE			
	SOP No.:	SOP-QC-044-02	Effective Date:	01.01.2017
	Supersedes:	SOP-QC-044-01	Next Review Date:	31.12.2019
	Department:	Quality Control	Page:	12 of 19
TITLE: OPERATION AND CALIBRATION OF FTIR				




→ Add to library, click the report the button, and take the report.

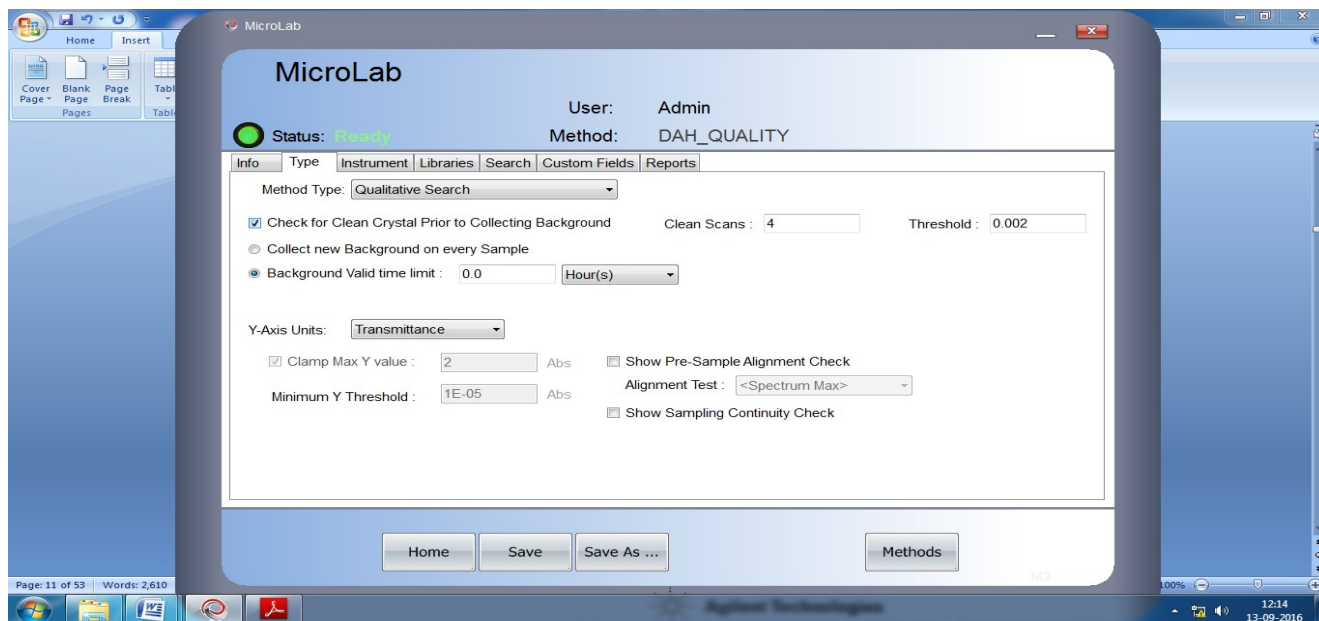


	Prepared by	Reviewed by	Checked by
Sign & Date			
Name	A.Navya	S.Prasad	Ch.Mahendar Reddy
Department	Quality Control	Quality Control	Quality Assurance

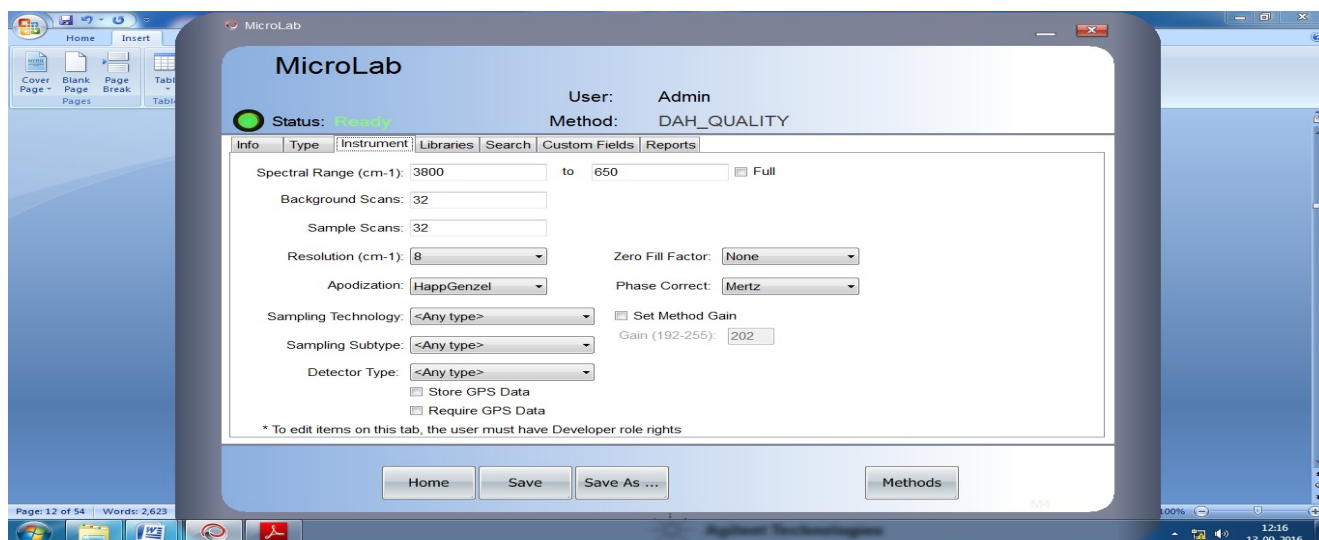
QA001-FM139-00

 Discovery Labs	STANDARD OPERATING PROCEDURE			
	SOP No.:	SOP-QC-044-02	Effective Date:	01.01.2017
	Supersedes:	SOP-QC-044-01	Next Review Date:	31.12.2019
	Department:	Quality Control	Page:	13 of 19
TITLE: OPERATION AND CALIBRATION OF FTIR				

→ Select Home → method → select the method → edit → Type → Method Type → Qualitative search and Y axis units Transmittance.




Click instrument button → give the spectral range and back → ground scans.

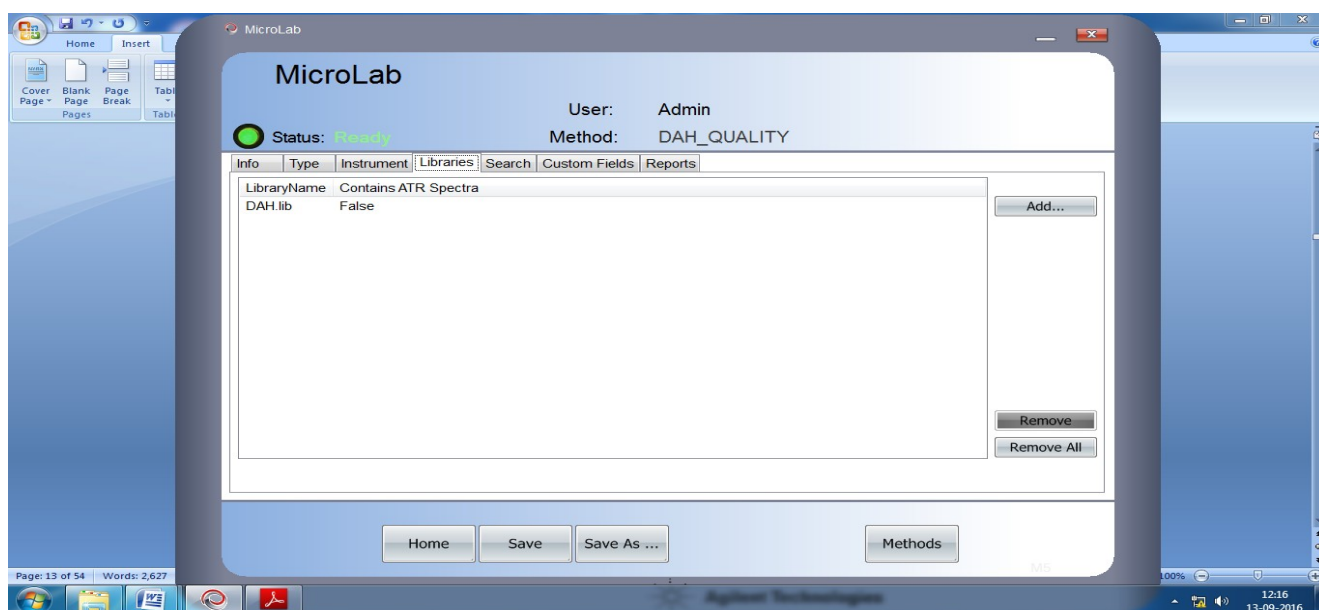


	Prepared by	Reviewed by	Checked by
Sign & Date			
Name	A.Navya	S.Prasad	Ch.Mahendar Reddy
Department	Quality Control	Quality Control	Quality Assurance

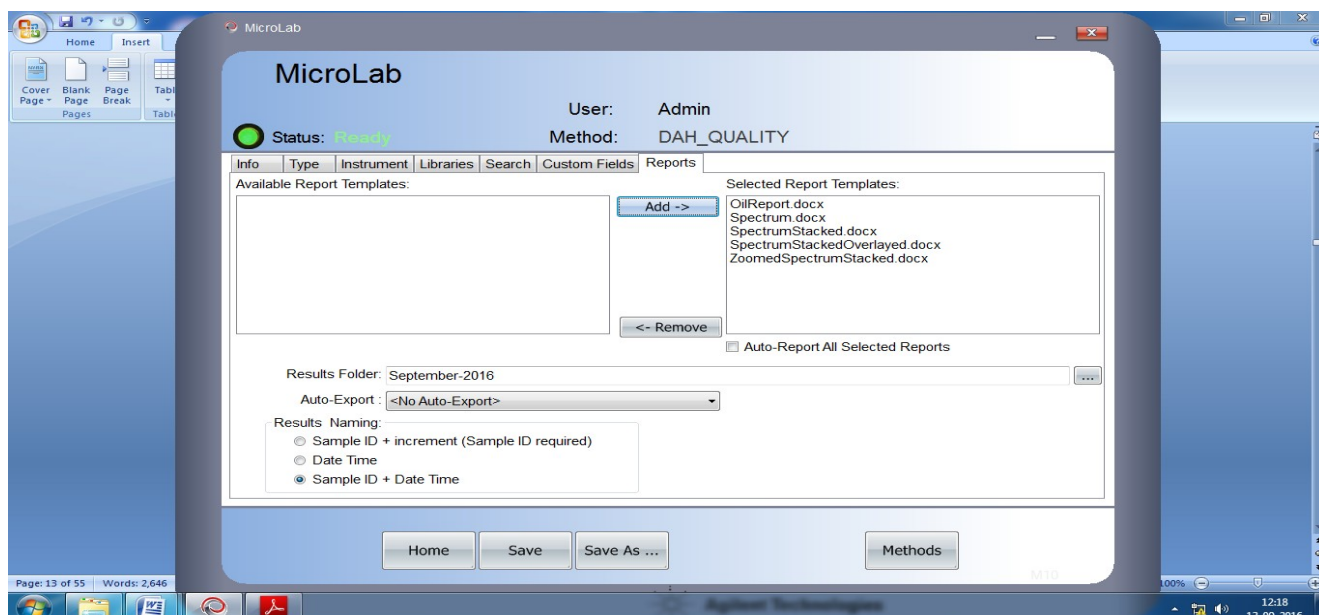
QA001-FM139-00

 Discovery Labs	STANDARD OPERATING PROCEDURE			
	SOP No.:	SOP-QC-044-02	Effective Date:	01.01.2017
	Supersedes:	SOP-QC-044-01	Next Review Date:	31.12.2019
	Department:	Quality Control	Page:	14 of 19
TITLE: OPERATION AND CALIBRATION OF FTIR				

→ Select the library button and add the library button




→ Click the report button add available report template to right to left

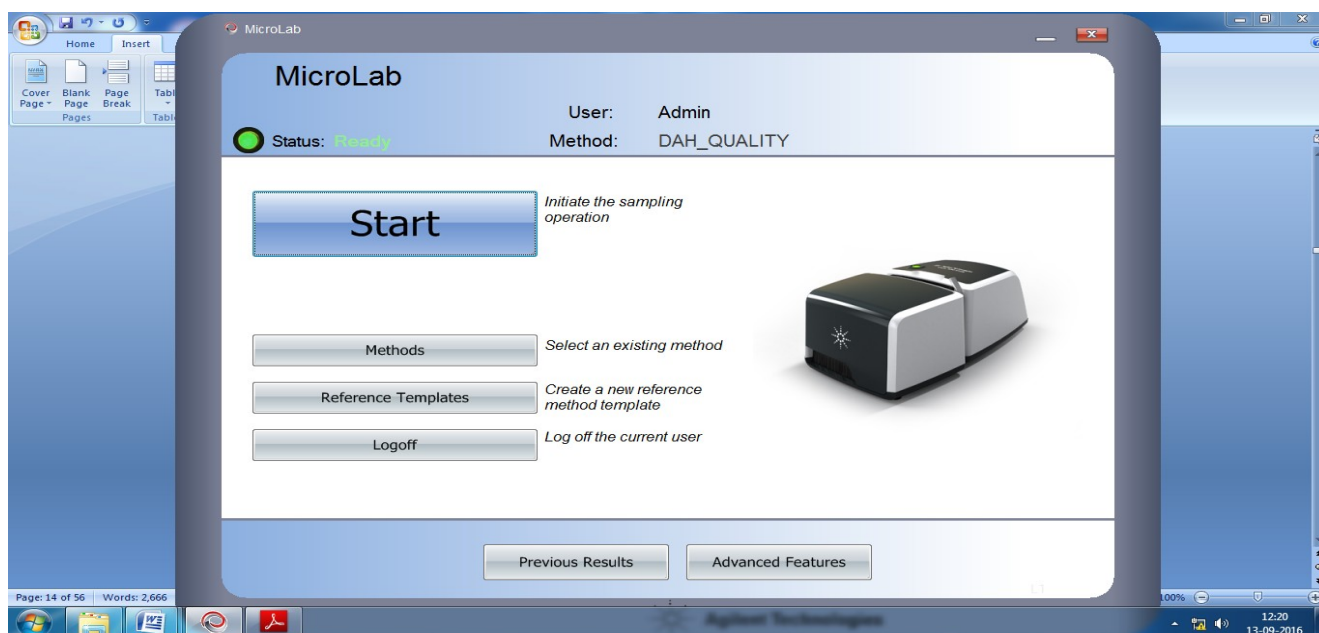


	Prepared by	Reviewed by	Checked by
Sign & Date			
Name	A.Navya	S.Prasad	Ch.Mahendar Reddy
Department	Quality Control	Quality Control	Quality Assurance

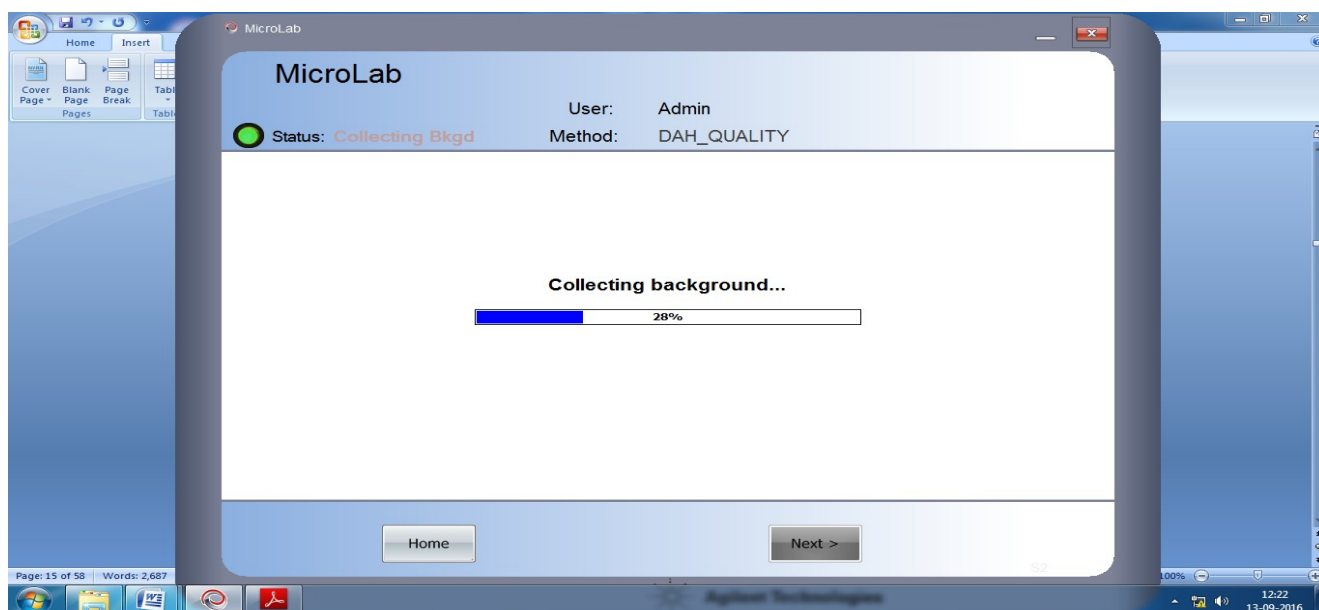
QA001-FM139-00

 Discovery Labs	STANDARD OPERATING PROCEDURE			
	SOP No.:	SOP-QC-044-02	Effective Date:	01.01.2017
	Supersedes:	SOP-QC-044-01	Next Review Date:	31.12.2019
	Department:	Quality Control	Page:	15 of 19
TITLE: OPERATION AND CALIBRATION OF FTIR				

Save as the method and go to the home and select the qualitative method and click the activate button start button is blinking click the start button.




→ Collect the background put the blank Kbr pellet click the next button

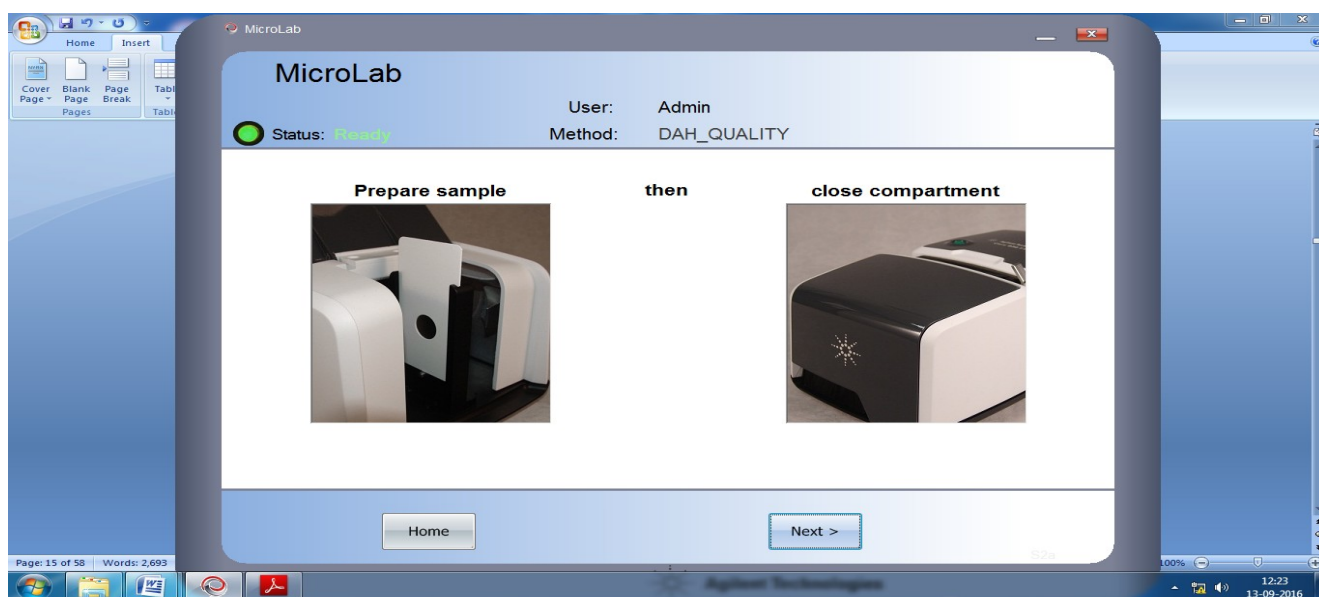


	Prepared by	Reviewed by	Checked by
Sign & Date			
Name	A.Navya	S.Prasad	Ch.Mahendar Reddy
Department	Quality Control	Quality Control	Quality Assurance

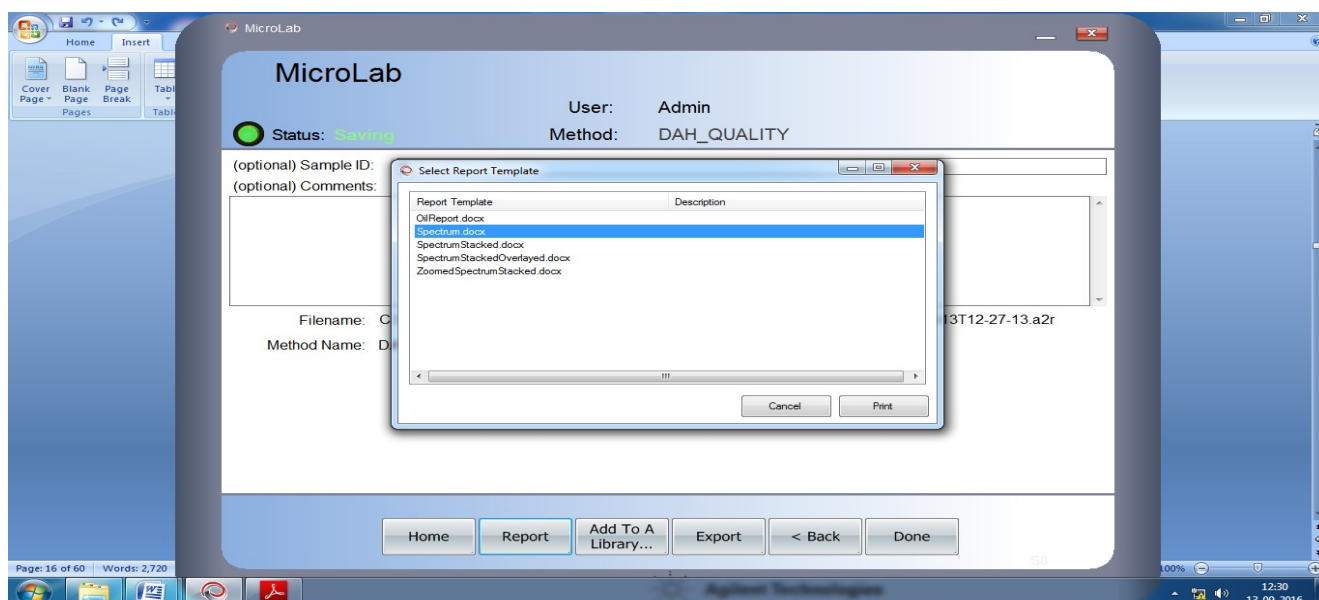
QA001-FM139-00

 Discovery Labs	STANDARD OPERATING PROCEDURE			
	SOP No.:	SOP-QC-044-02	Effective Date:	01.01.2017
	Supersedes:	SOP-QC-044-01	Next Review Date:	31.12.2019
	Department:	Quality Control	Page:	16 of 19
TITLE: OPERATION AND CALIBRATION OF FTIR				


→ After collecting background prepare the sample



→ Click the next button and give the sample name and collecting the sample and go to the data handling and click the report button and select the spectrum stacked and print.



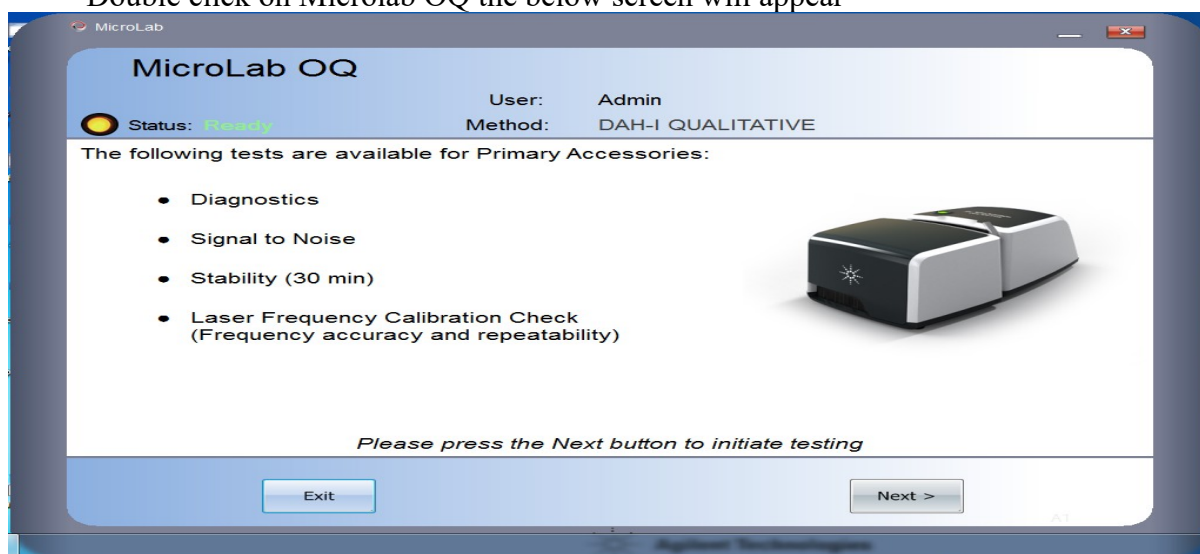
	Prepared by	Reviewed by	Checked by
Sign & Date			
Name	A.Navya	S.Prasad	Ch.Mahendar Reddy
Department	Quality Control	Quality Control	Quality Assurance

 Discovery Labs	STANDARD OPERATING PROCEDURE			
	SOP No.:	SOP-QC-044-02	Effective Date:	01.01.2017
	Supersedes:	SOP-QC-044-01	Next Review Date:	31.12.2019
	Department:	Quality Control	Page:	17 of 19
TITLE: OPERATION AND CALIBRATION OF FTIR				

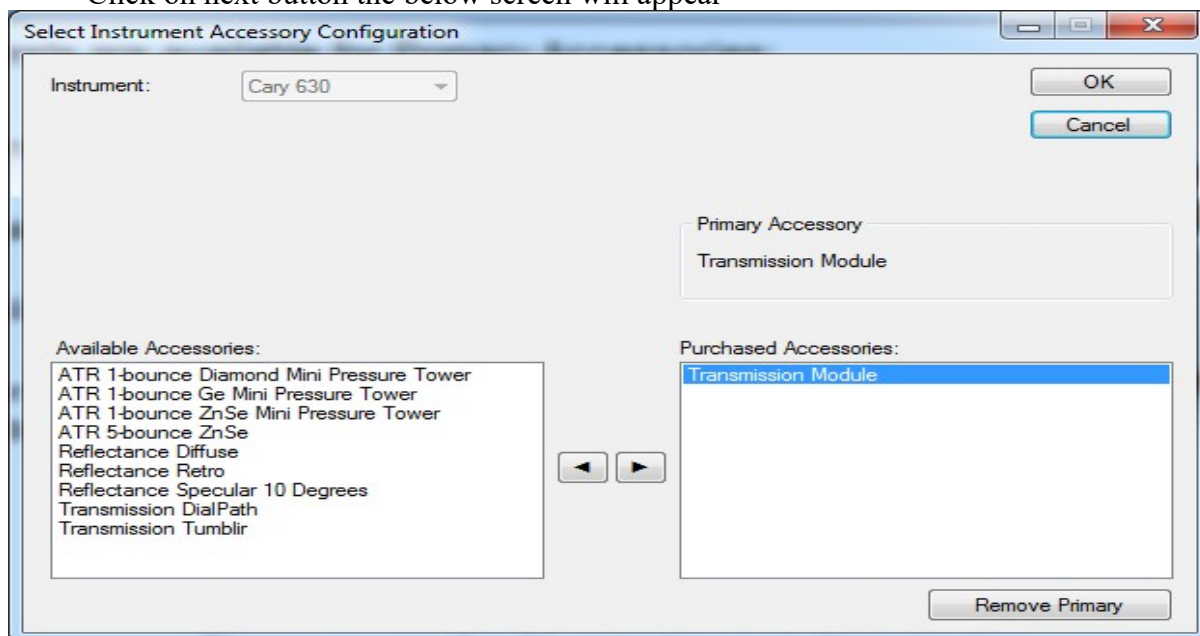
5.4 Calibration of FTIR:

Frequency: Every 4 months.


Double click on MicroLab OQ the below screen will appear



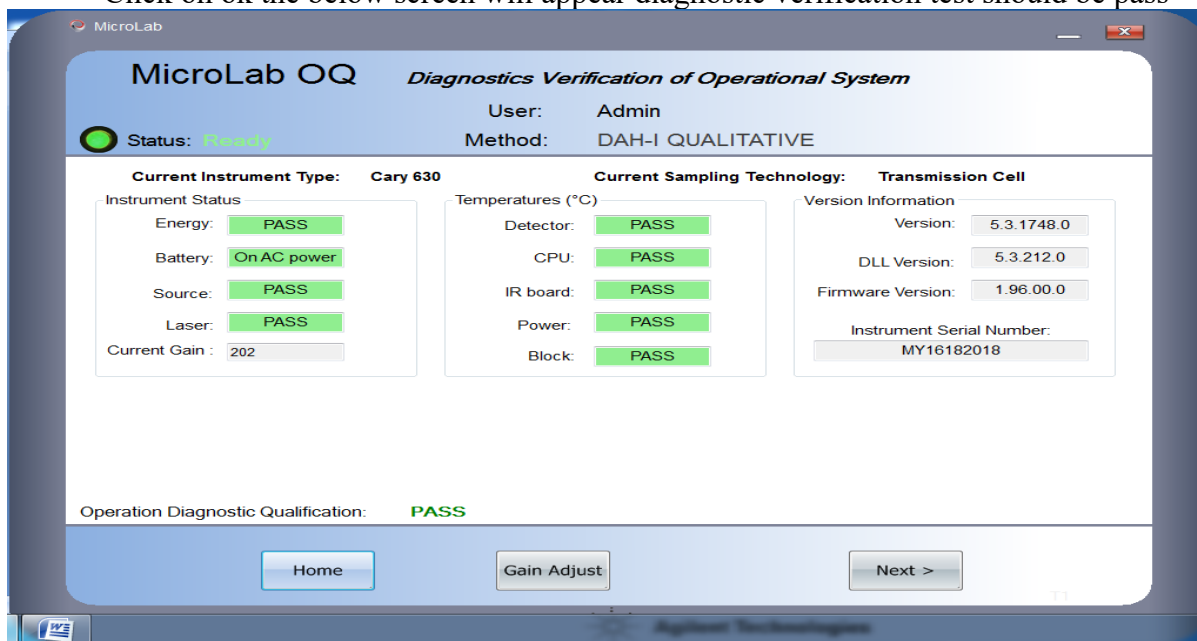
Click on next button the below screen will appear



	Prepared by	Reviewed by	Checked by
Sign & Date			
Name	A.Navya	S.Prasad	Ch.Mahendar Reddy
Department	Quality Control	Quality Control	Quality Assurance

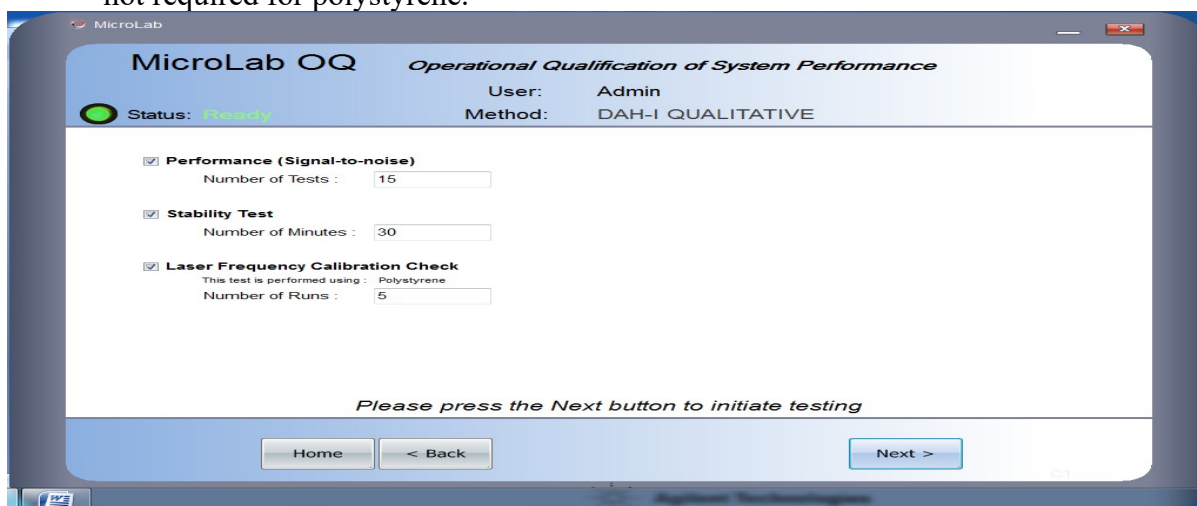
 Discovery Labs	STANDARD OPERATING PROCEDURE			
	SOP No.:	SOP-QC-044-02	Effective Date:	01.01.2017
	Supersedes:	SOP-QC-044-01	Next Review Date:	31.12.2019
	Department:	Quality Control	Page:	18 of 19
TITLE: OPERATION AND CALIBRATION OF FTIR				

Click on ok the below screen will appear diagnostic verification test should be pass




The screenshot shows the 'MicroLab OQ' interface for 'Diagnostics Verification of Operational System'. The status is 'Ready'. The user is 'Admin' and the method is 'DAH-I QUALITATIVE'. The current instrument type is 'Cary 630' and the current sampling technology is 'Transmission Cell'. The instrument status section shows 'Energy: PASS', 'Battery: On AC power', 'Source: PASS', and 'Laser: PASS'. The temperatures section shows 'Detector: PASS', 'CPU: PASS', 'IR board: PASS', 'Power: PASS', and 'Block: PASS'. The version information section shows 'Version: 5.3.1748.0', 'DLL Version: 5.3.212.0', 'Firmware Version: 1.96.00.0', and 'Instrument Serial Number: MY16182018'. The operation diagnostic qualification is 'PASS'. At the bottom, there are buttons for 'Home', 'Gain Adjust', and 'Next >'.

Click the next button the below screen will appear is open and tick mark the performance (signal to-Noise), Stability test, Laser Frequency calibration check. First two parameter is not required for polystyrene.



The screenshot shows the 'MicroLab OQ' interface for 'Operational Qualification of System Performance'. The status is 'Ready'. The user is 'Admin' and the method is 'DAH-I QUALITATIVE'. The performance section is checked, with 'Number of Tests' set to 15. The stability test is checked, with 'Number of Minutes' set to 30. The laser frequency calibration check is checked, with 'Number of Runs' set to 5. A message at the bottom says 'Please press the Next button to initiate testing'. At the bottom, there are buttons for 'Home', '< Back', and 'Next >'.

	Prepared by	Reviewed by	Checked by
Sign & Date			
Name	A.Navya	S.Prasad	Ch.Mahendar Reddy
Department	Quality Control	Quality Control	Quality Assurance

 Discovery Labs	STANDARD OPERATING PROCEDURE			
	SOP No.:	SOP-QC-044-02	Effective Date:	01.01.2017
	Supersedes:	SOP-QC-044-01	Next Review Date:	31.12.2019
	Department:	Quality Control	Page:	19 of 19
TITLE: OPERATION AND CALIBRATION OF FTIR				

5.4.1 Performance (Signal-to-noise)

Number of tests: 15

Specification: >20000

5.4.2 Stability Test:

Number of Minute: 30

Specification: <1%

5.4.3 Wave number Accuracy test:

(Polystyrene ASTM 1921B)

Number of Runs: 5

Spec. Wave number: 3082.10 1601.35 1583.35 1028.50

Spec. Accuracy : <0.30 <0.30 <0.10 <0.30

Spec Repeatability : <0.05 <0.05 <0.05 <0.05.

6.0 FORMATS / ANNEXURE(S):

6.1 Instrument Usage log Book : QC044-FM075

6.2 FTIR Calibration Record : QC048-FM086

7.0 CHANGE HISTORY:

Revision No.	Effective Date	Details of Revision	Ref CCF No.
00	16.9.2016	New SOP introduced	--
01	01.01.2017	SOP format changed make to in line with SOP-QA-001-04.	QC-CRF-025/16

	Prepared by	Reviewed by	Checked by
Sign & Date			
Name	A.Navya	S.Prasad	Ch.Mahendar Reddy
Department	Quality Control	Quality Control	Quality Assurance

QA001-FM139-00