



Spektrofotometrie

Příprava vzorku.



Vzorky pro měření spekter.

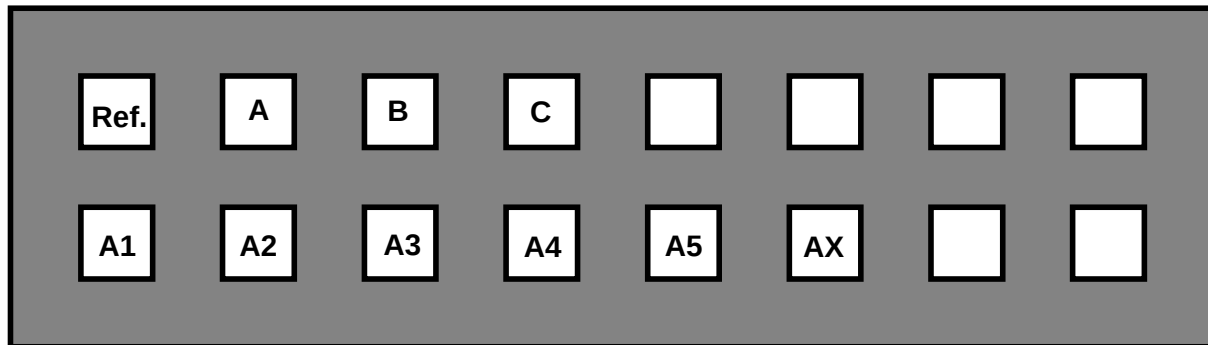
Před zahájením samotného měření si připravte stojánek na květy se vzorky.

Jako referenční vzorek použijte destilovanou vodu.

Po dokončení všech měření jednotlivé květy vypláchněte.

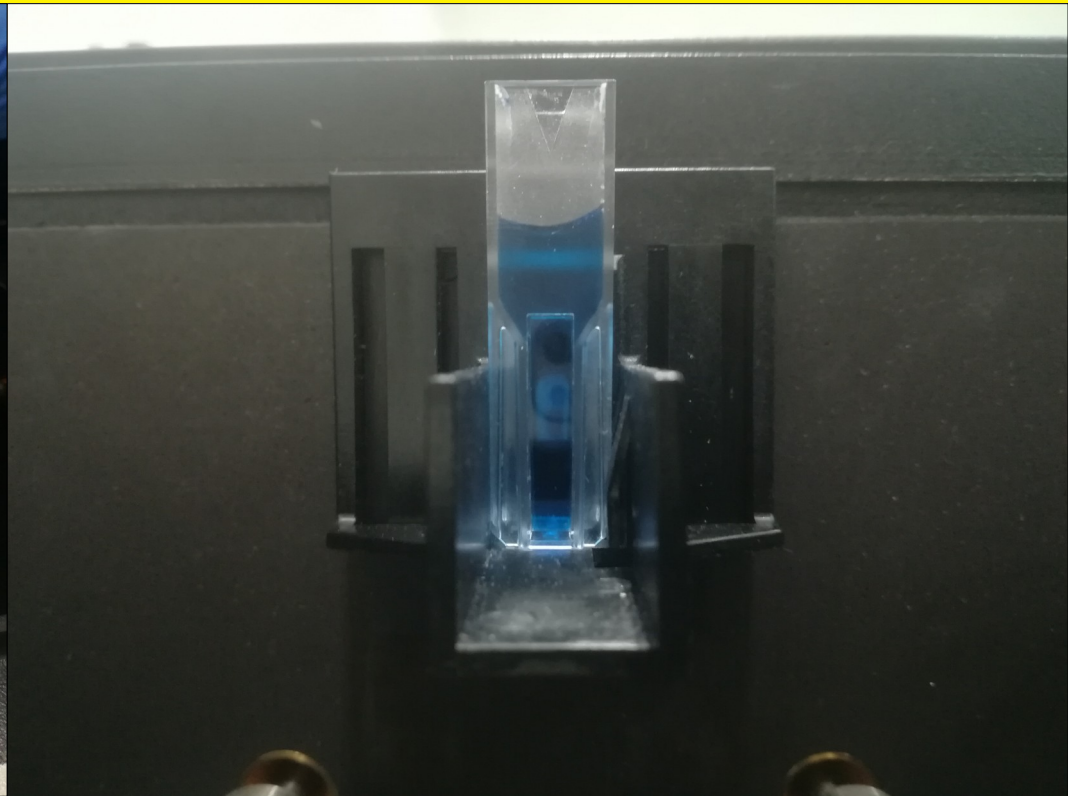
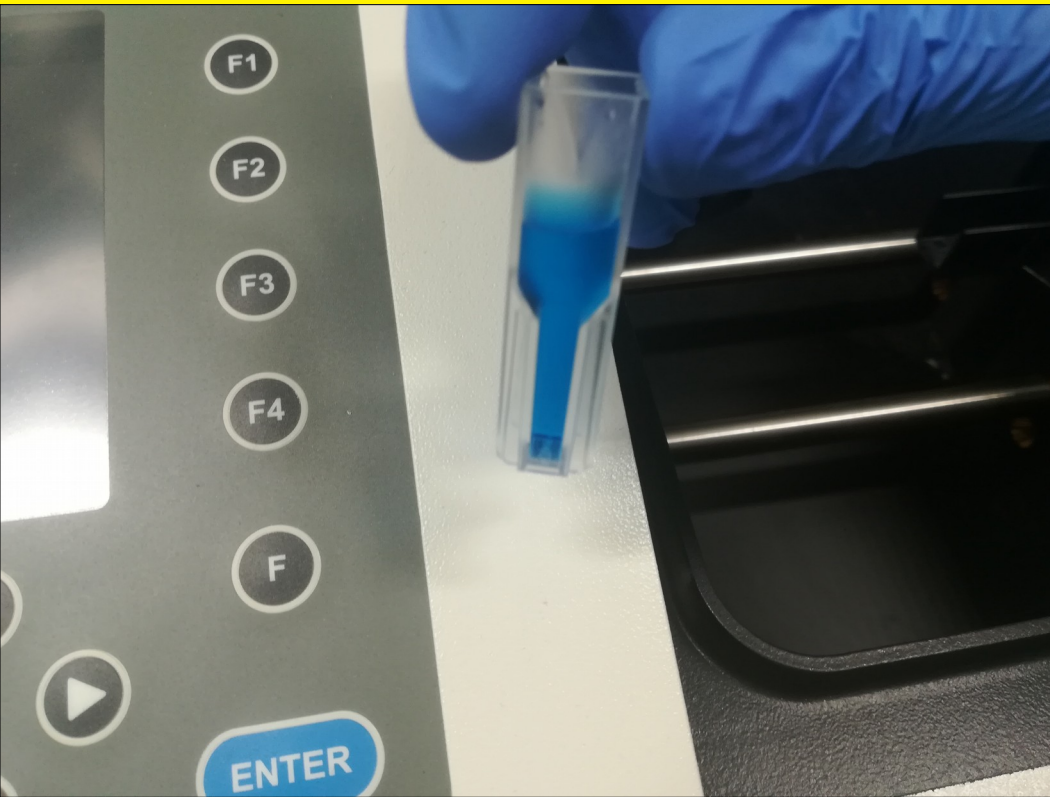


Vzorky pro stanovení koncentrace.



Vkládání kyvety do spektrofotometru.

Kyvetu vkládáme co nejtěsněji ke stěně držáku, tak aby světelný paprsek procházel širší částí zúženého spodku kyvety.



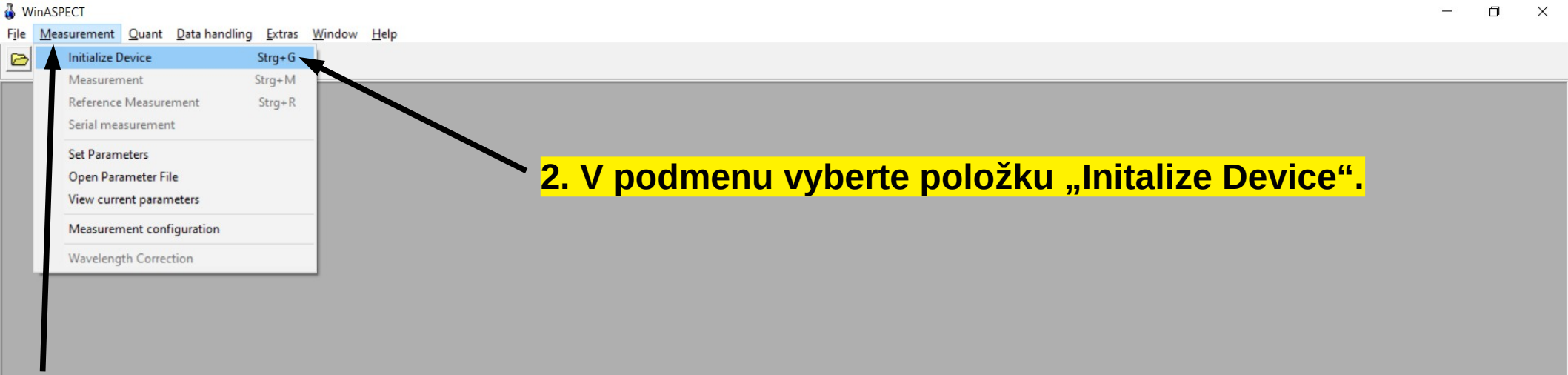
Inicializace spektrofotometru.

Zapněte SPECORD 40 a vyčkejte 2 minuty na spuštění zařízení.



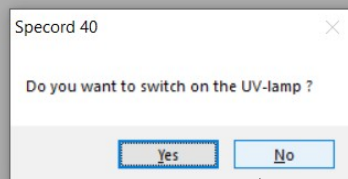
Po spuštění zařízení klikněte na ikonu WinASPECT

shaping tomorrow with you



1. Vyberte v hlavním menu položku „Measurement.“

2. V podmenu vyberte položku „Initalize Device“.



Zmáčkněte tlačítko „No“ pro vypnutí UV-lampy.



Current parameters

Specord 40

Designation	SPECORD 40 - 232F139
Title	Calibration
Operator	X00
Date/Time	09/10/2021 09:52
Display	Absorbance
Correction	Reference
Lamp change at	320 nm

Meas. mode	Wavelengths
Wavelength [nm]	812
Integration time [s]	0.2

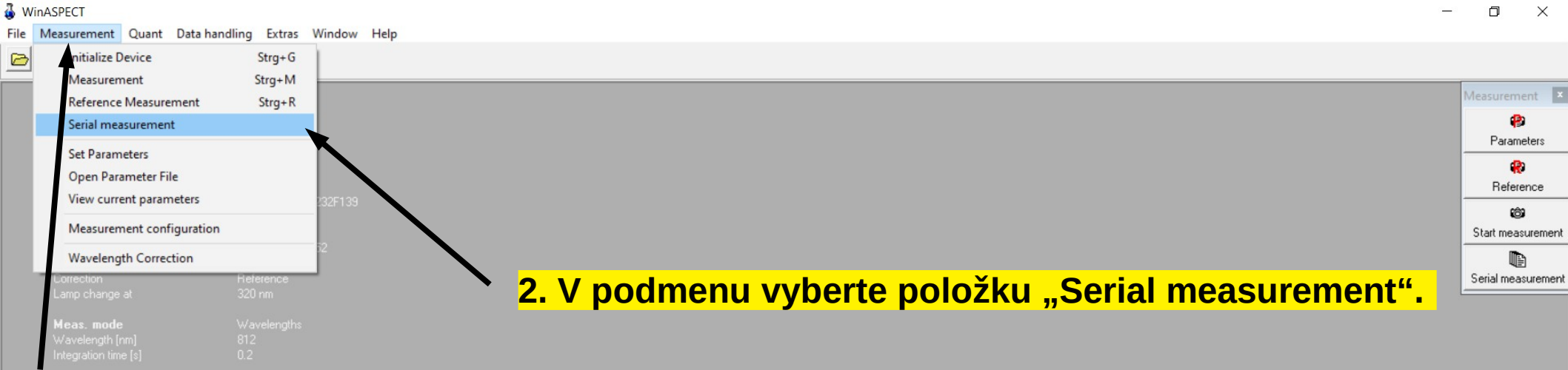
Measurement x

- Parameters
- Reference
- Start measurement
- Serial measurement



Zmáčkněte tlačítko „OK“ pro potvrzení úspěšného testu.

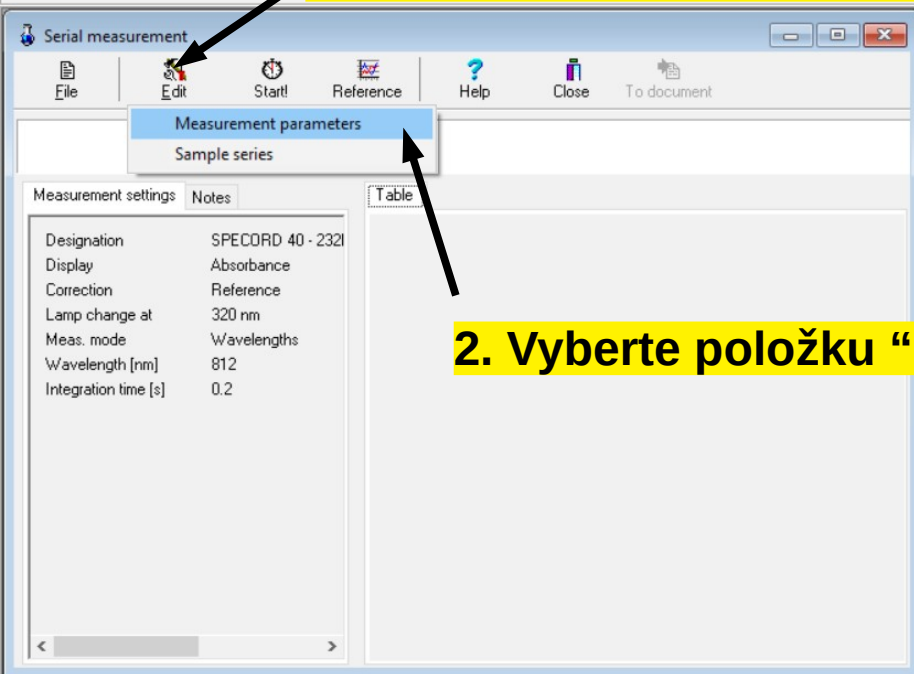
Proměření absorpčních spekter vzorků A, B a C.



1. Vyberte v hlavním menu položku „Measurement“.

2. V podmenu vyberte položku „Serial measurement“.

1. V podokně „Serial measurement“ klikněte na ikonu „Edit“.



Serial measurement

File Edit Start Reference Help Close To document

Measurement parameters
Sample series

Measurement settings Notes Table

Designation	SPECORD 40 - 2321
Display	Absorbance
Correction	Reference
Lamp change at	320 nm
Meas. mode	Wavelengths
Wavelength [nm]	812
Integration time [s]	0.2

2. Vyberte položku “Measurement parameters“ z ikonového menu.



Serial measurement

File Edit Start Reference Help Close To document

V podokně „Specord 40“ klikněte na ikonu „New“.

Measurement settings Notes

Designation SPECORD 40 - 2321
Display Absorbance
Correction Reference
Lamp change at 320 nm
Meas. mode Wavelengths
Wavelength [nm] 812
Integration time [s] 0.2

Table

Table

Specord 40 - C:\Users\Specord40\Documents\Praktika_CZ\Kantori\X00_C.par

OK Cancel New Open Save Save as... Help Print

Settings Device Mode Accessories

Title Calibration

Operator X00

Cycle Mode
 None
 Manual
 Automatic
 Time controlled
Number 3
Interval time [s] 1

Display
 Transmittance
 Absorbance
 Energy
 Reflectance
Min: 0
Max: 3

Correction
 No
 Standard
 Reference
 Special
Open

saved New

V podokně „Specord 40” vyberte panel „Settings“ a nastavte odpovídající hodnoty.

Serial measurement

File Edit Start! Reference Help Close To document

Measurement settings Notes Table

Designation	SPECORD 40 - 232I
Display	Absorbance
Correction	Reference
Lamp change at	320 nm
Meas. mode	Wavelengths
Wavelength [nm]	812
Integration time [s]	0.2

Specord 40 - untitled.par

Settings Device Mode Accessories

Title: Spectrums

Operator: 00X

Cycle Mode

- None
- Manual
- Automatic
- Time controlled

Number: 3
Interval time [s]: 1

Display

- Transmittance
- Absorbance
- Energy
- Reflectance

Min: 0.0
Max: 3.0

Correction

- No
- Standard
- Reference
- Special

Open

Cycle Node: *None*

Display: *Absorbance*

Correction: *Reference*

Operator: *Označení týmu*

Title: *Spectrums*



Serial measurement

File Edit Start! Reference Help Close To document

Measurement settings Notes Table

Designation	SPECORD 40 - 2321
Display	Absorbance
Correction	Reference
Lamp change at	320 nm
Meas. mode	Wavelengths
Wavelength [nm]	812
Integration time [s]	0.2

V dalším kroku v podokně „Specord 40” vyberte panel “Mode” a nastavte odpovídající hodnoty.

Specord 40 - untitled.par

OK Cancel Save Open Save as... Help Print

Settings Device **Mode** Accessories

Meas. mode Scan Mode

Scan Mode

Range [nm] 375 - 1100

Delta lambda [nm] 1,0

Speed [nm/s] 50,0

Integration time [s] 0.02

not saved

Meas. mode: *Scan Mode*

Range [nm]: *375 -1100*

Delta lambda [nm]: *1.0*

Speed [nm/s]: *50.0*



Serial measurement

File Edit Start! Reference Help Close To document

Measurement settings Notes Table

Designation	SPECORD 40 - 2321
Display	Absorbance
Correction	Reference
Lamp change at	320 nm
Meas. mode	Wavelengths
Wavelength [nm]	812
Integration time [s]	0.2

Klikněte na ikonu „Save as...“.



Specord 40 - untitled.par

OK Cancel New Open Save Save as... Help Print

Settings Device Mode Accessories

Meas. mode Scan Mode

Scan Mode

Range [nm] 375 - 1100

Delta lambda [nm] 1,0

Speed [nm/s] 50,0

Integration time [s] 0.02

not saved Save as...

Soubor uložte do adresáře Dokumenty\Praktika_CZ\KruhXX, kde XX je číslo kruhu.

Serial measurement

File Edit Start! Reference Help Close To document

Measurement settings Notes Table

Designation	SPECORD 40 - 232I
Display	Absorbance
Correction	Reference
Lamp change at	320 nm
Meas. mode	Wavelengths
Wavelength [nm]	812
Integration time [s]	0.2

Save file

Save in: Kartori

Name	Date modified	Type	Size
No items match your search.			

File name: 00X_S

Save as type: Parameterfile

Save Cancel

File name: Označení Týmu + _S (Název souboru je tvořen označením týmu a příponou _S)

Nakonec zmáčkněte tlačítko „Save“.



Serial measurement

File Edit Start! Reference Help Close To document

Measurement settings Notes Table

Designation	SPECORD 40 - 232I
Display	Absorbance
Correction	Reference
Lamp change at	320 nm
Meas. mode	Wavelengths
Wavelength [nm]	812
Integration time [s]	0.2

Klikněte na ikonu „OK“.

Specord 40 ... (Users\Specord40\Documents\Praktika_CZ\Kantori\00X_S.par)

OK Cancel New Open Save Save as... Help Print

Settings Device Mode Accessories

Meas. mode Scan Mode

Scan Mode

Range [nm] 375 - 1100

Delta lambda [nm] 1,0

Speed [nm/s] 50,0

Integration time [s] 0.02

saved OK



1. Klikněte na ikonu „Edit“.

Serial measurement

File Edit Start Reference Help Close To document

Measurement parameters

Sample series

Measurement settings Notes

Designation	SPECORD 40 - 2321
Display	Absorbance
Correction	Reference
Lamp change at	320 nm
Meas. mode	Scan Mode
Range [nm]	375 - 1100
Delta lambda [nm]	1
Speed [nm/s]	50

2. Vyberte položku „Sample series“ z ikonového menu.



Serial measurement

File Edit Start! Reference Help Close To document

Measurement settings Notes Table

Designation	SPECORD 40 - 2321
Display	Absorbance
Correction	Reference
Lamp change at	320 nm
Meas. mode	Scan Mode
Range [nm]	375 - 1100
Delta lambda [nm]	1
Speed [nm/s]	50

V podokně „Serial measurement“ vyberte panel „General“ a nastavte odpovídající hodnoty.

Serial measurement

General Samples Extras

Description
Spectrums A, B and C

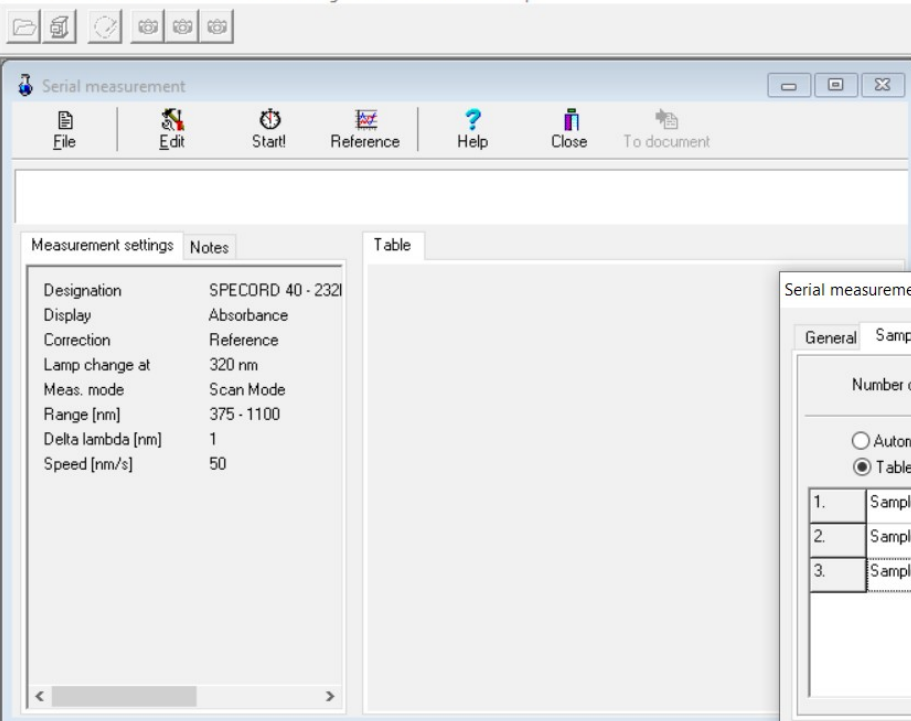
Operator
00X

Notes

OK Cancel

Description: Spectrums A, B and C

Operator: Označení vašeho týmu



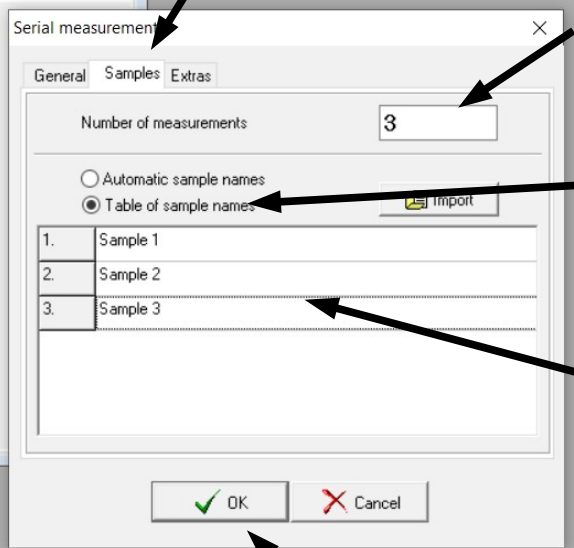
1. V dalším kroku v podokně „Serial measurement“ vyberte panel „Samples“.

2. Nastavte „Number of measurements“ na hodnotu 3.

3. Vyberte přepínač „Table of samples names“.

4. Vyplňte názvy vzorků podle označení zásobnicích vzorků.

5. Nakonec zmáčkněte tlačítko „OK“ a okno „Serial measurement“ se zavře.





Serial measurement

File Edit Start Reference Help Close To document

Spectrums A, B and C
00X

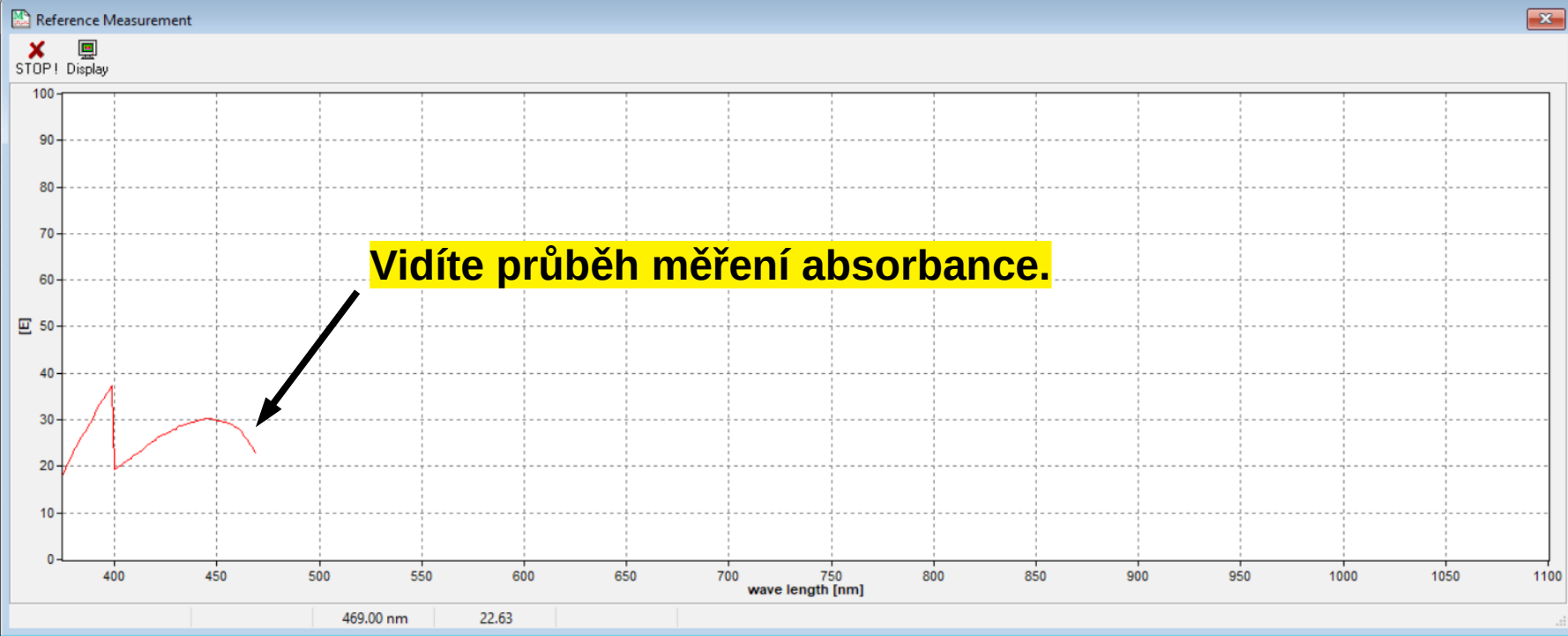
Measurement settings Notes Table

Designation	SPECORD 40 - 2321
Display	Absorbance
Correction	Reference
Lamp change at	320 nm
Meas. mode	Scan Mode
Range [nm]	375 - 1100
Delta lambda [nm]	1
Speed [nm/s]	50

Vložte referenční vzorek a klikněte na ikonu „Reference“.



Serial measurement



Klikněte na ikonu „Start“.

Serial measurement

File Edit **Start!** Reference Help Close To document

Spectrums A, B and C
00X

Measurement settings Notes Table

Designation	SPECORD 40 - 232
Display	Absorbance
Correction	Reference
Lamp change at	320 nm
Meas. mode	Scan Mode
Range [nm]	375 - 1100
Delta lambda [nm]	1
Speed [nm/s]	50



Serial measurement

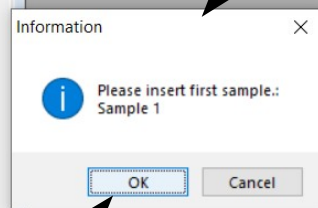
File Edit Start! Reference Help Close To document

Spectrums A, B and C
00X

Measurement settings Notes Table

Designation	SPECORD 40 - 232I
Display	Absorbance
Correction	Reference
Lamp change at	320 nm
Meas. mode	Scan Mode
Range [nm]	375 - 1100
Delta lambda [nm]	1
Speed [nm/s]	50

Objeví se žádost o vložení vzorku A.



Vložte vzorek A a zmáčkněte tlačítko „OK“.

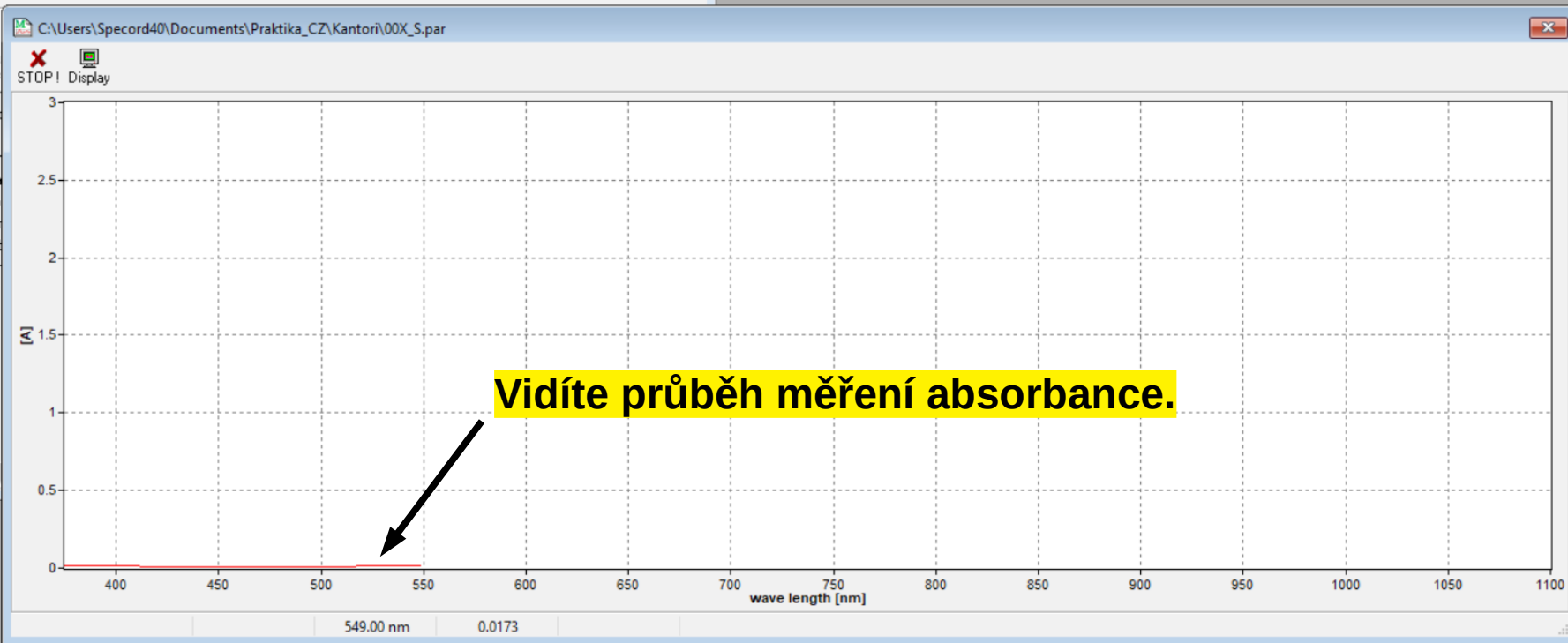


Serial measurement

File Edit Start! Reference Help Close To document

Measureme

Designation
Display
Correction
Lamp cha
Meas. mo
Range [n
Delta lam
Speed [n





Serial measurement

File Edit Start! Reference Help Close To document

Spectrums A, B and C
00X

Measurement settings Notes

Designation SPECORD 40 - 2321
Display Absorbance
Correction Reference
Lamp change at 320 nm
Meas. mode Scan Mode
Range [nm] 375 - 1100
Delta lambda [nm] 1
Speed [nm/s] 50

Table Grafic

		375.0 nm	376.0 nm	377.0 nm	3
1	Sample 1	0.0126	0.0129	0.0130	0

Objeví se žádost o vložení vzorku B.

Information

Please insert next sample:
Sample 2

OK Cancel

Vložte vzorek B a zmáčkněte tlačítko „OK“.



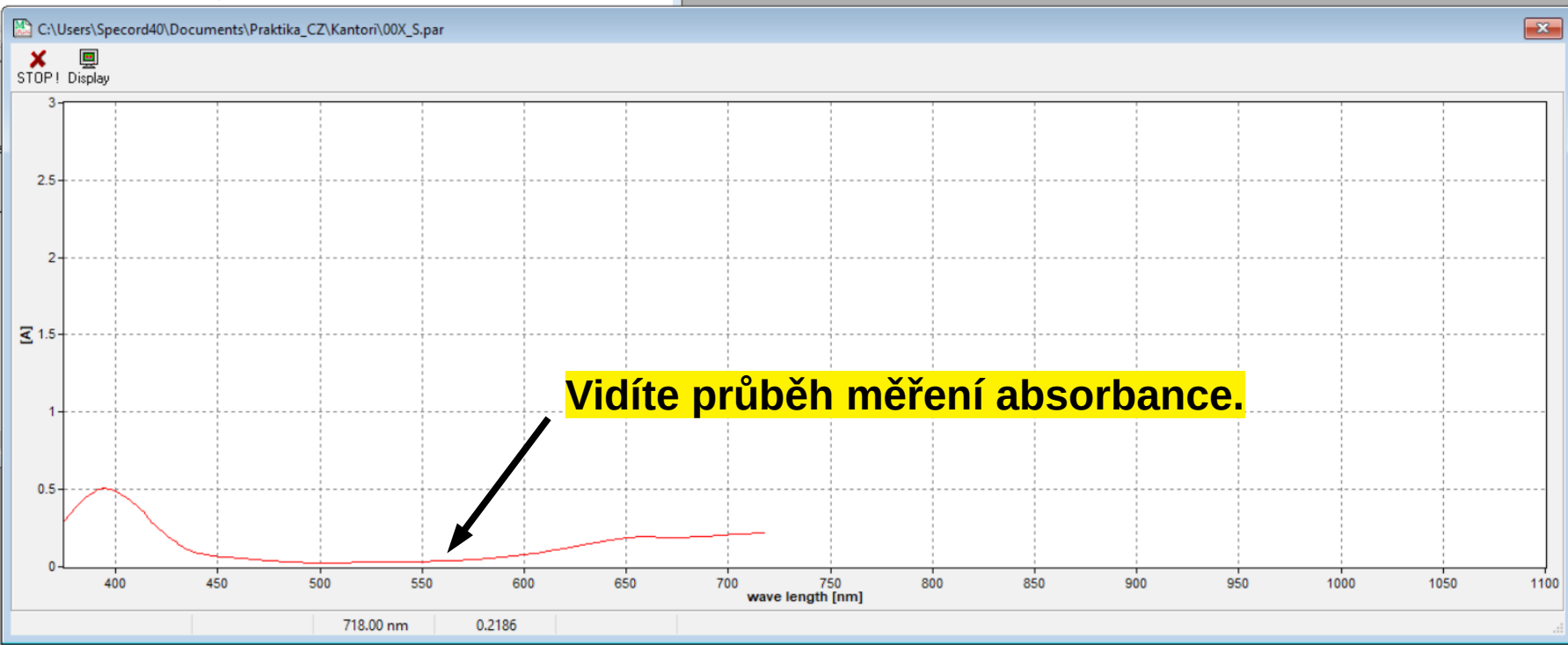
Serial measurement

File Edit Start! Reference Help Close To document

Spectrums A, B and C

Measurement set

- Designation
- Display
- Correction
- Lamp change a
- Meas. mode
- Range [nm]
- Delta lambda [n
- Speed [nm/s]





Serial measurement

File Edit Start Reference Help Close To document

Spectrums A, B and C
00X

Measurement settings Notes

Designation SPECORD 40 - 2321
Display Absorbance
Correction Reference
Lamp change at 320 nm
Meas. mode Scan Mode
Range [nm] 375 - 1100
Delta lambda [nm] 1
Speed [nm/s] 50

Table Grafik

		375.0 nm	376.0 nm	377.0 nm	3
1	Sample 1	0.0126	0.0129	0.0130	0
2	Sample 2	0.3013	0.3163	0.3319	0

Objeví se žádost o vložení vzorku C.

Information

Please insert next sample:
Sample 3

OK Cancel

Vložte vzorek C a zmáčkněte tlačítko „OK“.



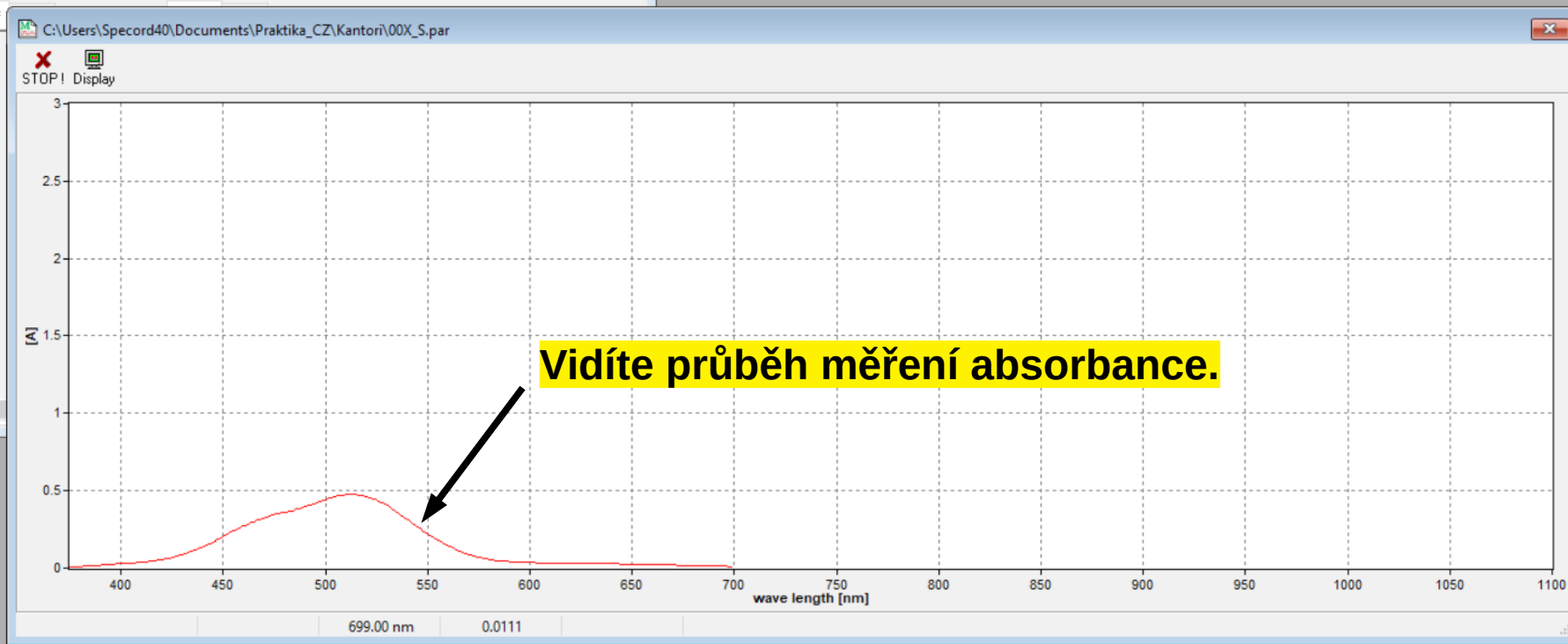
Serial measurement

File Edit Start! Reference Help Close To document

Spectrums A, B and C
00X

Measurement settings

- Designation
- Display
- Correction
- Lamp change at
- Meas. mode
- Range [nm]
- Delta lambda [nm]
- Speed [nm/s]





Serial measurement

File Edit Start! Reference Help Close To document

Spectrums A, B and C
00X

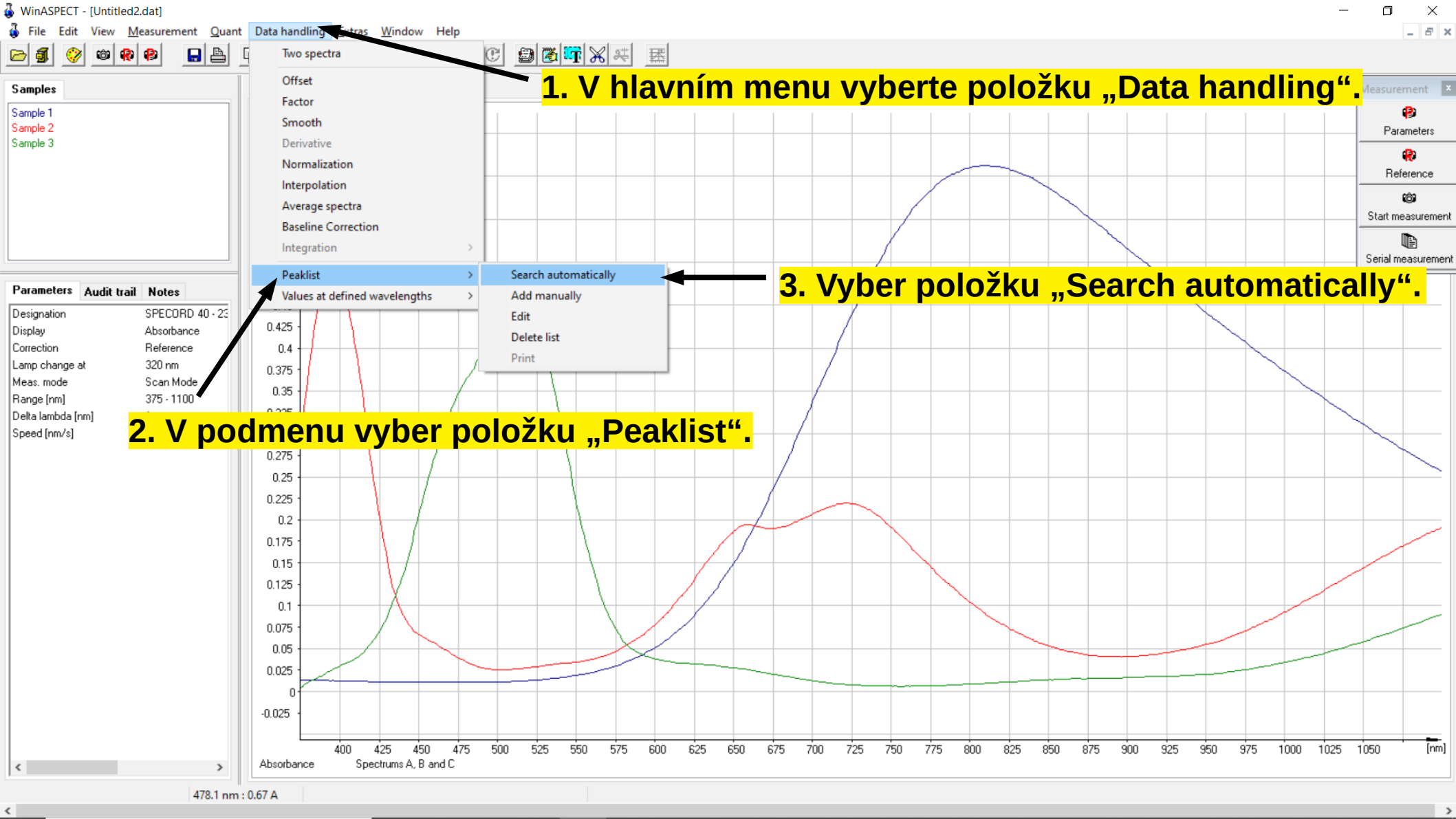
Measurement settings Notes

		375.0 nm	376.0 nm	377.0 nm	3
1	Sample 1	0.0126	0.0129	0.0130	0
2	Sample 2	0.3013	0.3163	0.3319	0
3	Sample 3	0.0049	0.0062	0.0079	0

Table Grafik

Designation SPECORD 40 - 2321
Display Absorbance
Correction Reference
Lamp change at 320 nm
Meas. mode Scan Mode
Range [nm] 375 - 1100
Delta lambda [nm] 1
Speed [nm/s] 50

Po proměření spekter klikni na ikonu „To document“.





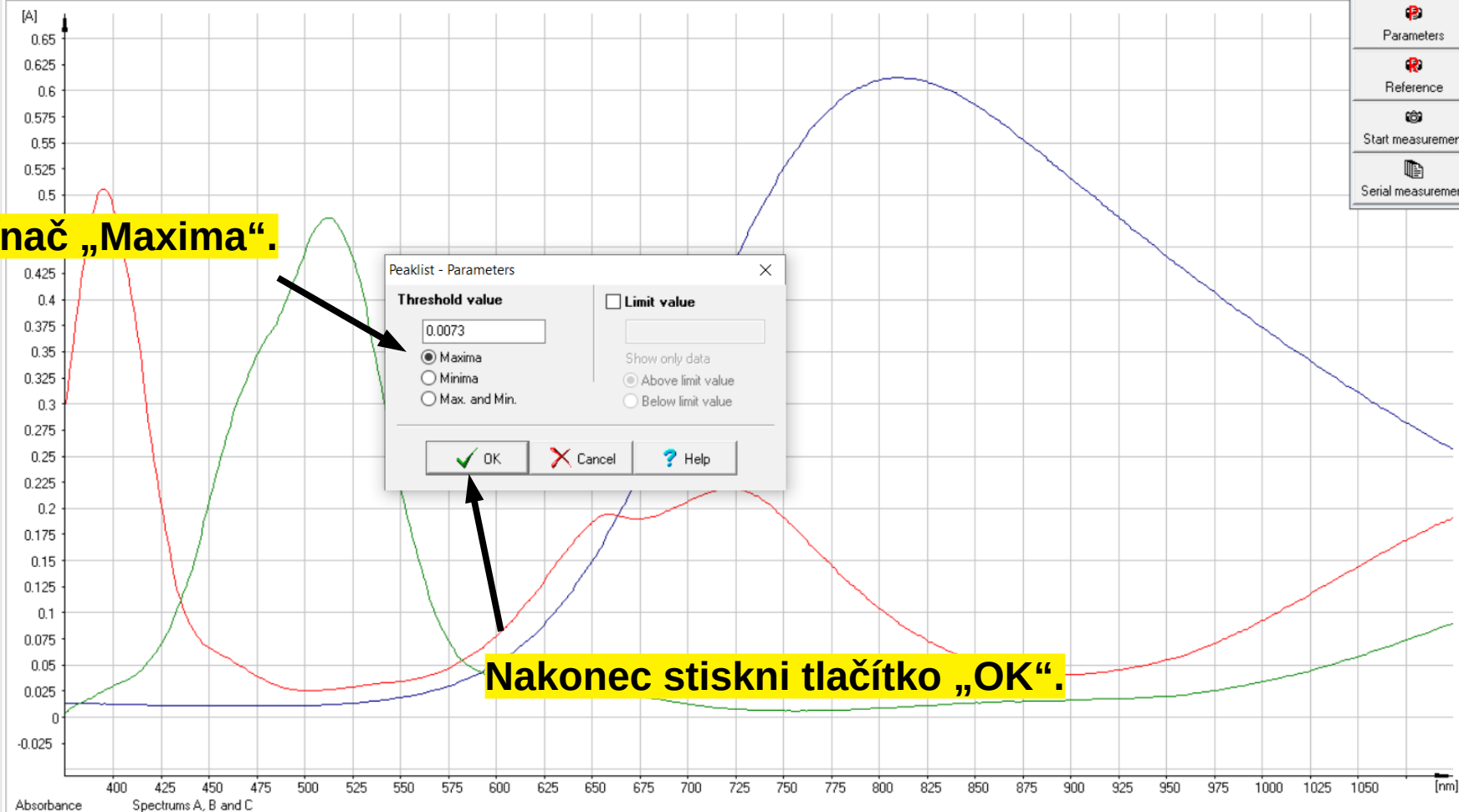
Samples

Sample 1
Sample 2
Sample 3

Parameter

Designation	SPECTRUM 40-1100
Display	Absorbance
Correction	Reference
Lamp change at	320 nm
Meas. mode	Scan Mode
Range [nm]	375 - 1100
Delta lambda [nm]	1
Speed [nm/s]	50

Transmittance Absorbance Values



Vyber přepínač „Maxima“.

Nakonec stiskni tlačítko „OK“.



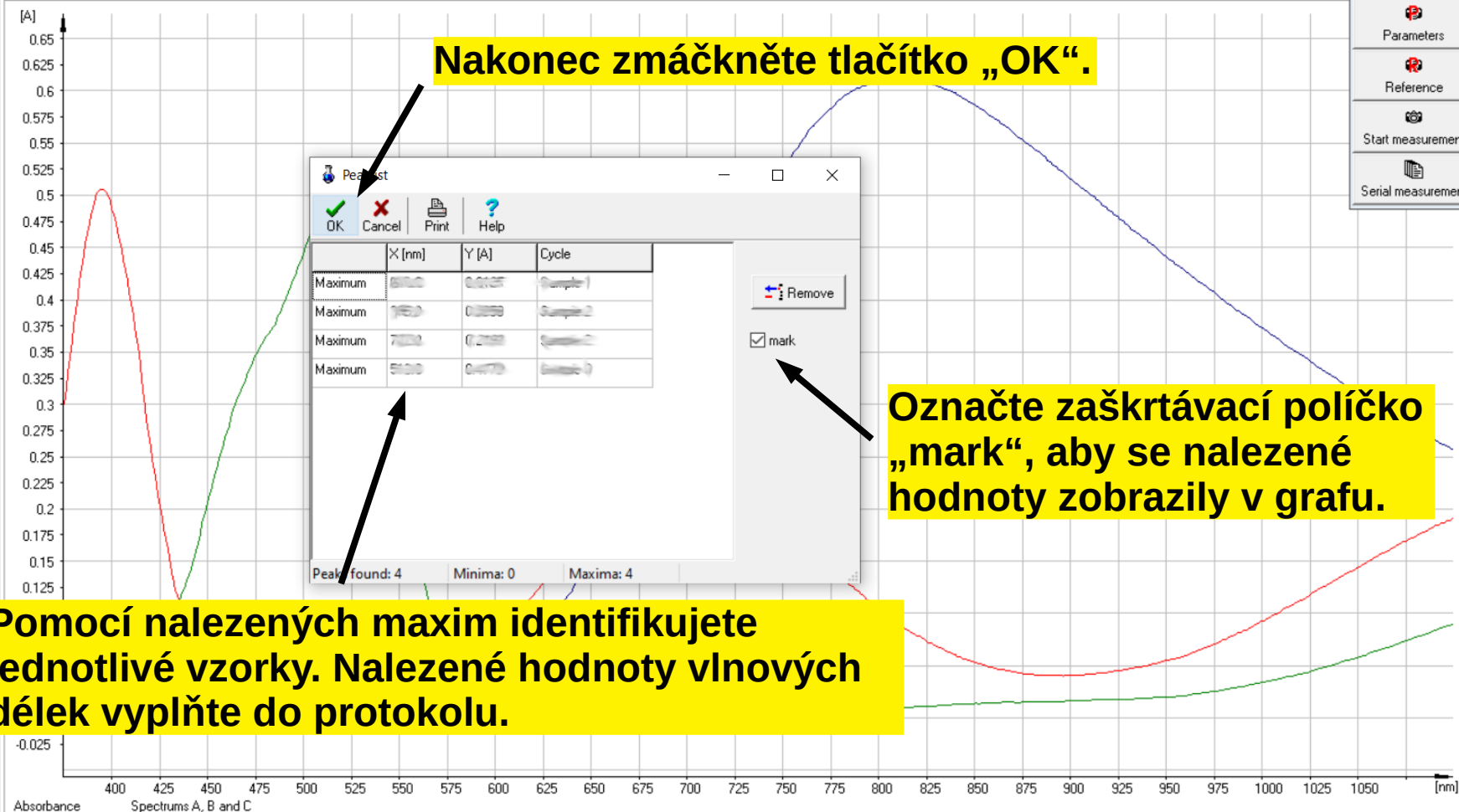
Samples

Sample 1
Sample 2
Sample 3

Parameters Audit trail Notes

Designation SPECORD 40 - 20
Display Absorbance
Correction Reference
Lamp change at 320 nm
Meas. mode Scan Mode
Range [nm] 375 - 1100
Delta lambda [nm] 1
Speed [nm/s] 50

Transmittance Absorbance Values



Measurement

Parameters

Reference

Start measurement

Serial measurement



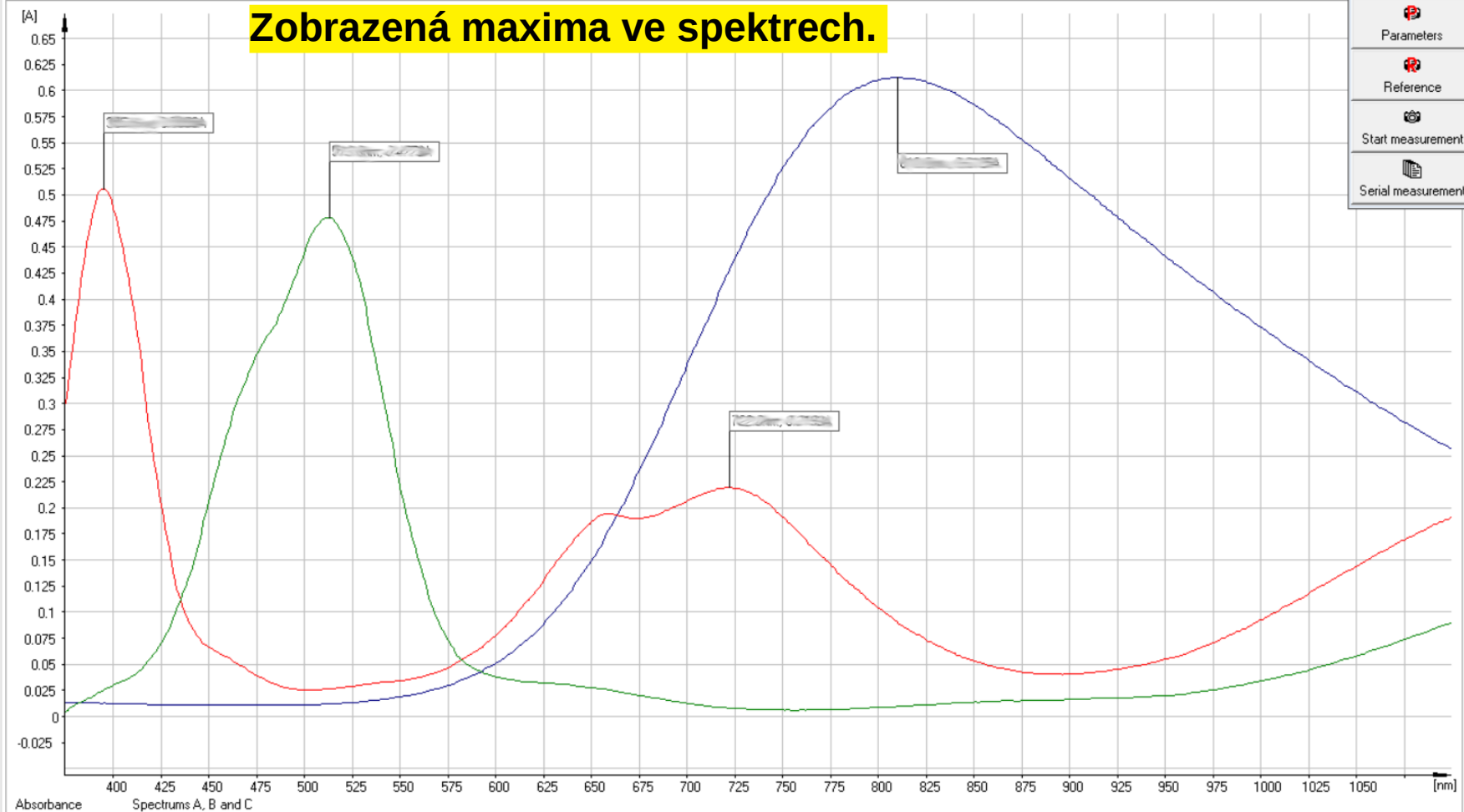
Samples

Sample 1
Sample 2
Sample 3

Parameters Audit trail Notes

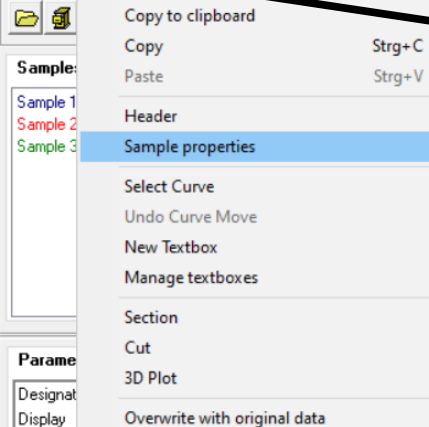
Parameters	Audit trail	Notes
Designation		SPECORD 40 - 20
Display		Absorbance
Correction		Reference
Lamp change at		320 nm
Meas. mode		Scan Mode
Range [nm]		375 - 1100
Delta lambda [nm]		1
Speed [nm/s]		50

Transmittance Absorbance Values



Measurement

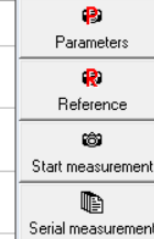
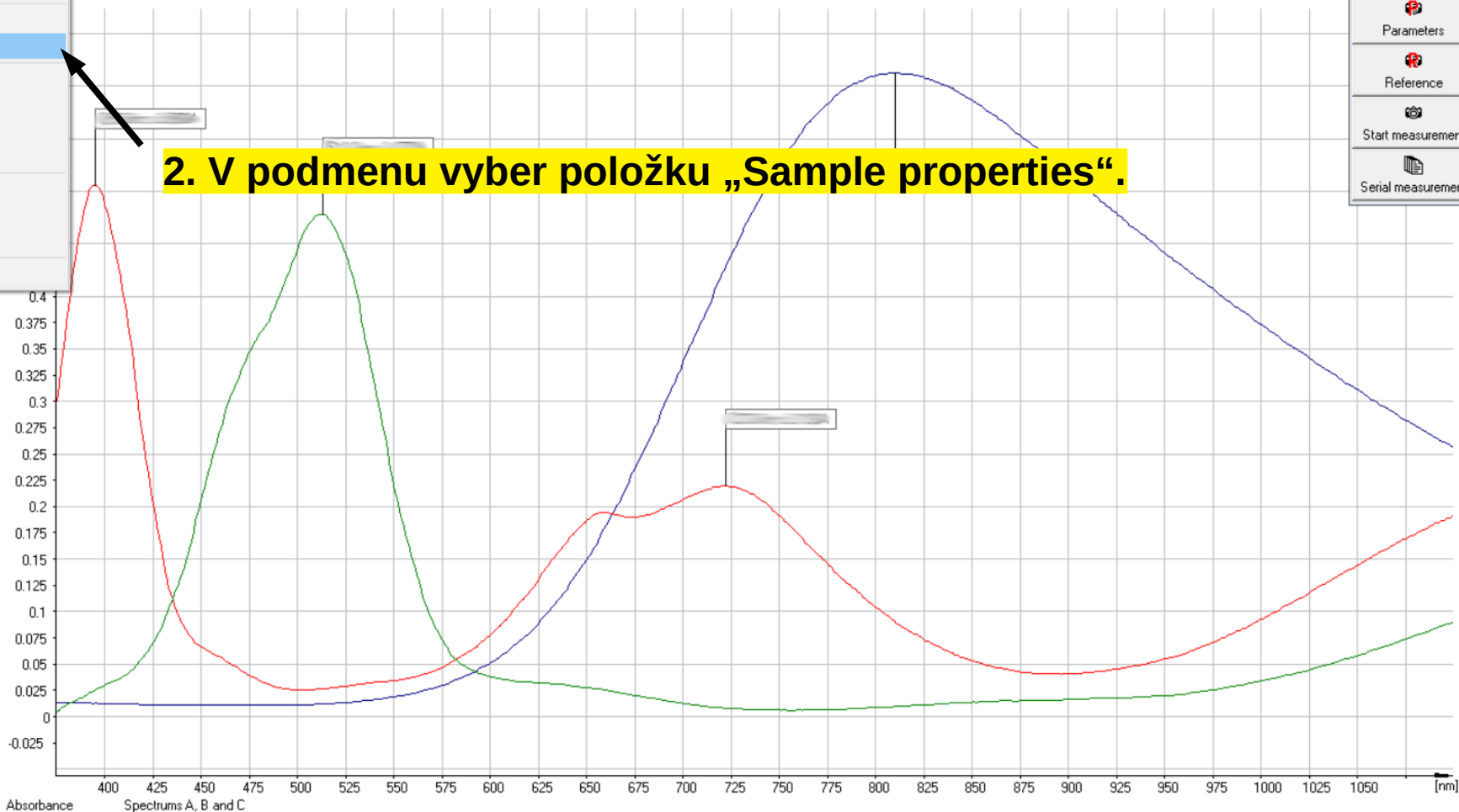
Parameters
Reference
Start measurement
Serial measurement

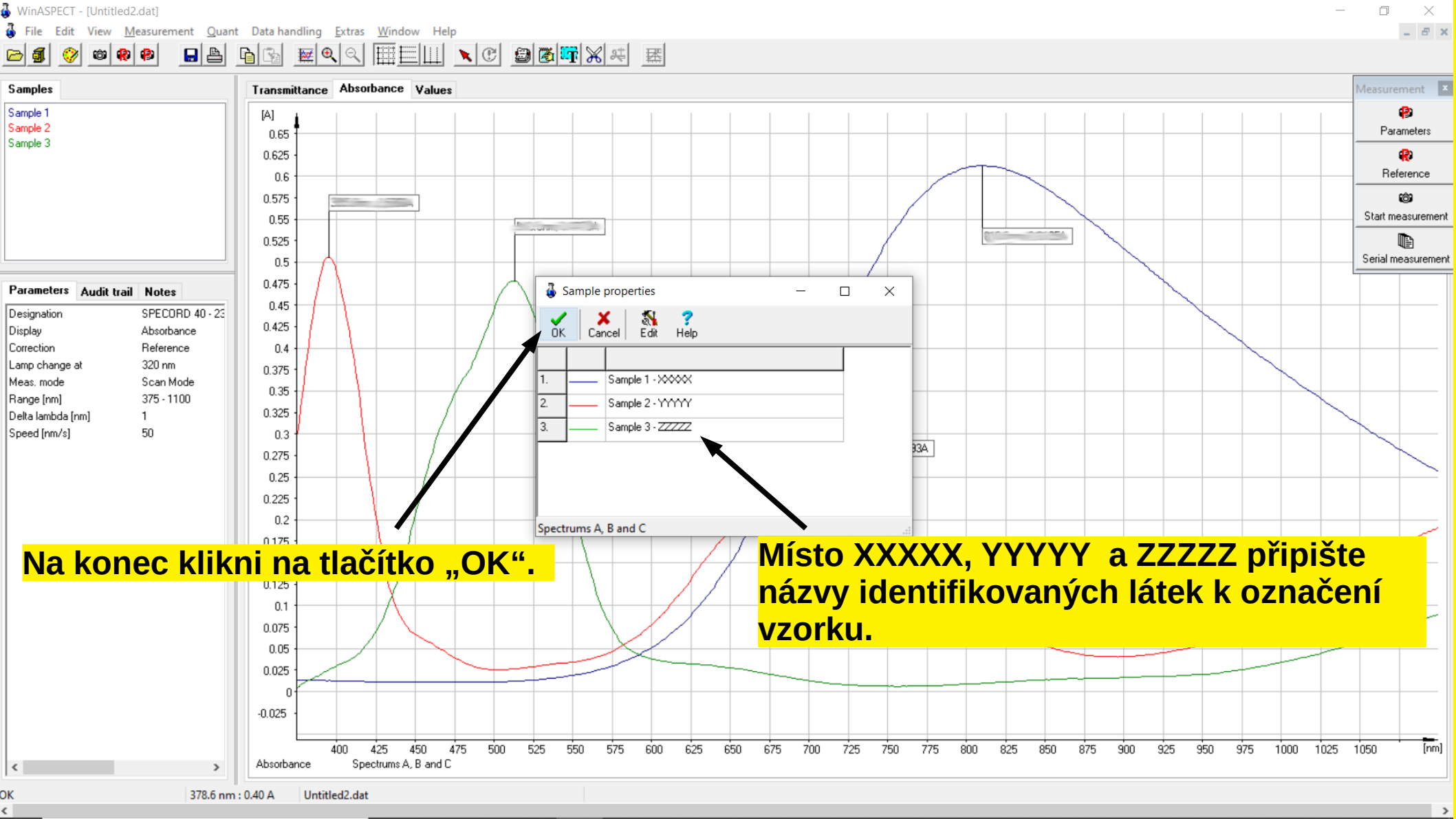


1. V hlavním menu vyberte položku „Edit“.

2. V podmenu vyber položku „Sample properties“.

Designat	Reference
Display	
Correction	Reference
Lamp change at	320 nm
Meas. mode	Scan Mode
Range [nm]	375 - 1100
Delta lambda [nm]	1
Speed [nm/s]	50





Na konec klikni na tlačítko „OK“.

Místo XXXXX, YYYYY a ZZZZZ připište názvy identifikovaných látek k označení vzorku.



New

Open

Close

Save

Save As...

Export

Print

Overlay

Exit

1

2

3

4

5

Lamp change at

Meas. mode

Range [nm]

Delta lambda [nm]

Speed [nm/s]

320 nm

Scan Mode

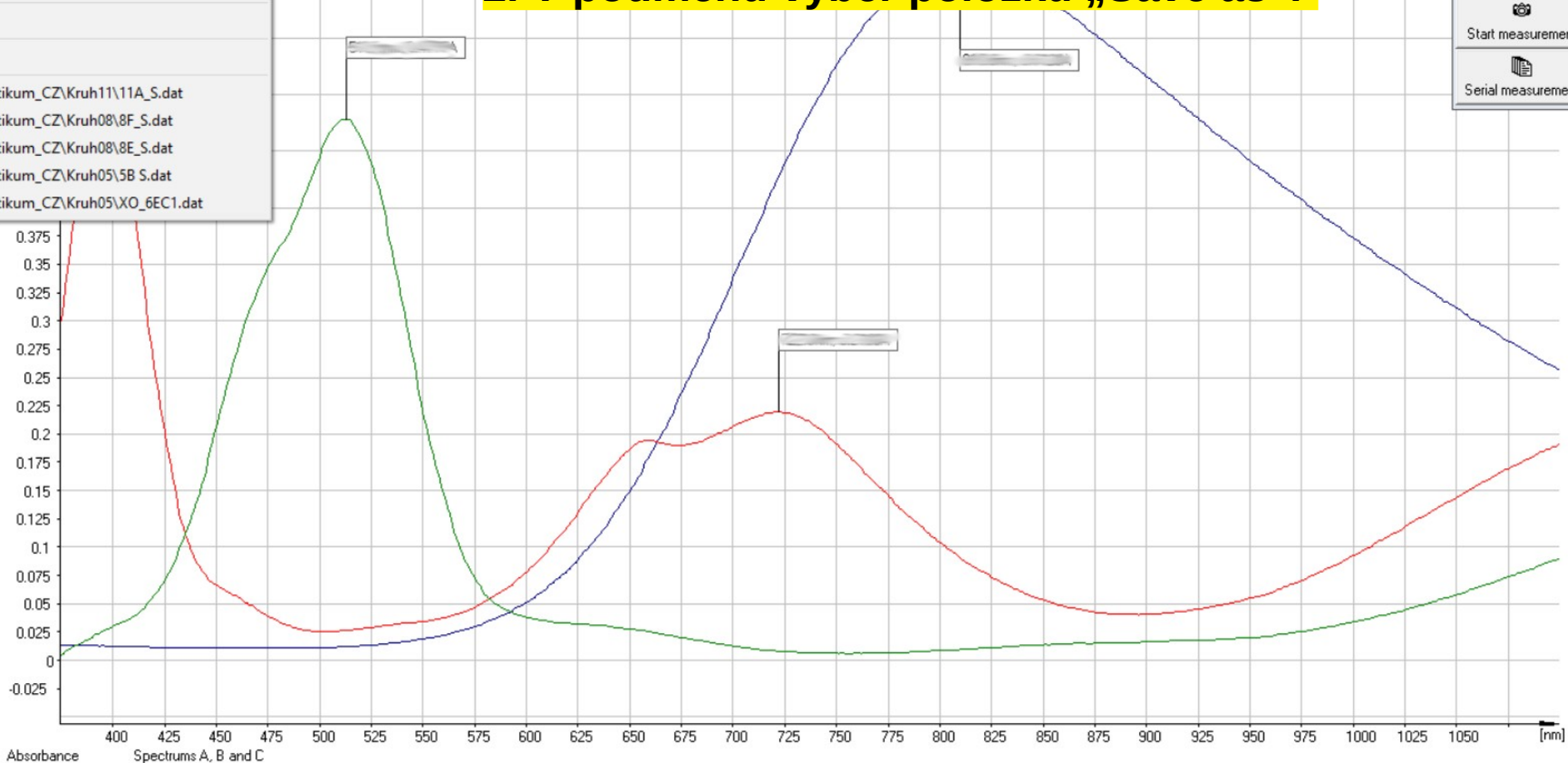
375 - 1100

1

50

1. V hlavním menu vyberte položku „File“.

2. V podmenu vyber položku „Save as“.



Measurement

Parameters

Reference

Start measurement

Serial measurement

Soubor uložte do adresáře Dokumenty\Praktika_CZIKruhXX, kde XX je číslo kruhu.

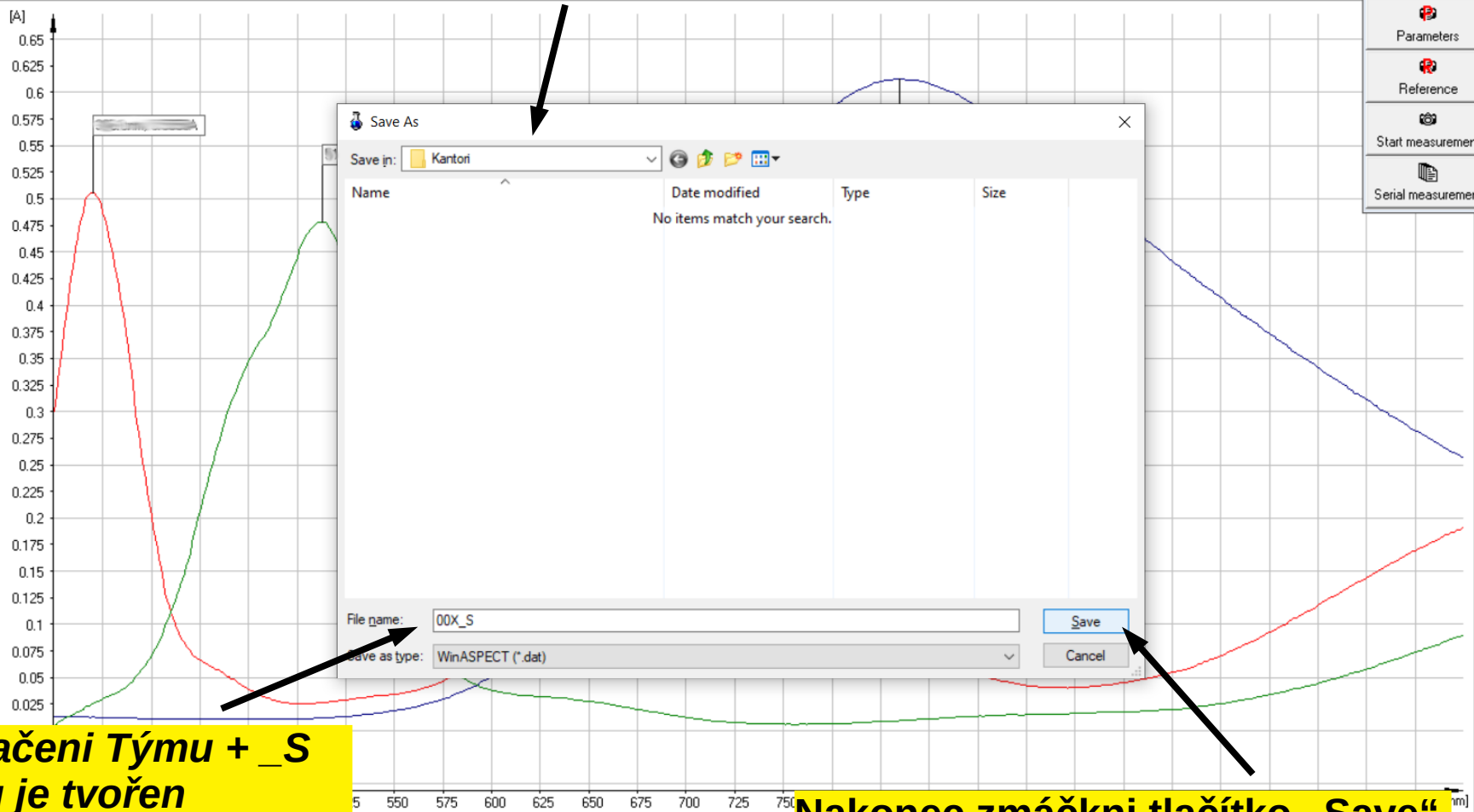
Samples

Sample 1 - XXXXX
Sample 2 - YYYYY
Sample 3 - ZZZZZ

Parameters Audit trail Notes

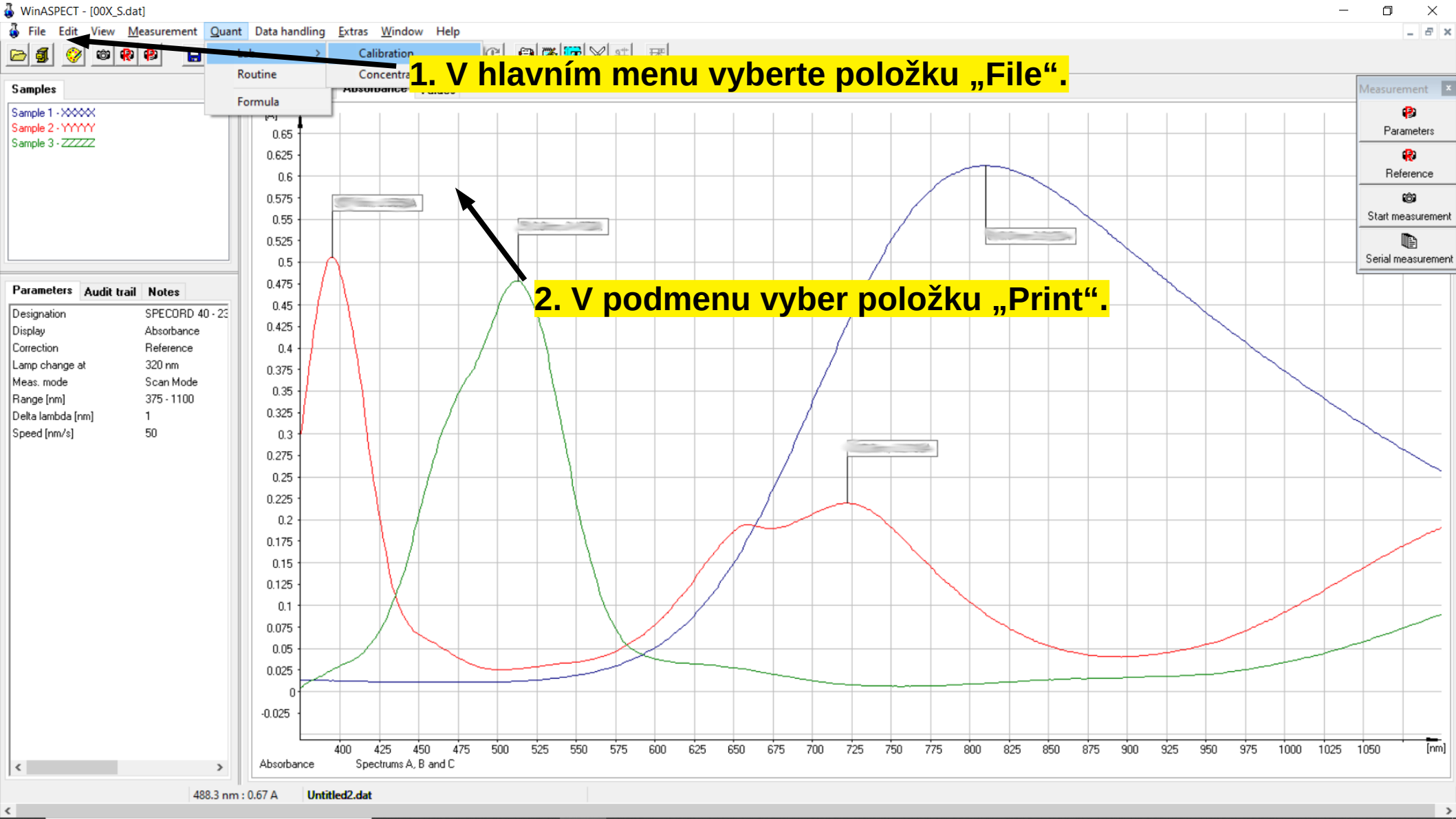
Designation	SPECORD 40 - 20
Display	Absorbance
Correction	Reference
Lamp change at	320 nm
Meas. mode	Scan Mode
Range [nm]	375 - 1100
Delta lambda [nm]	1
Speed [nm/s]	50

Transmittance Absorbance Val



File name: Označení Týmu + _S
(Název souboru je tvořen
označením týmu a příponou _S)

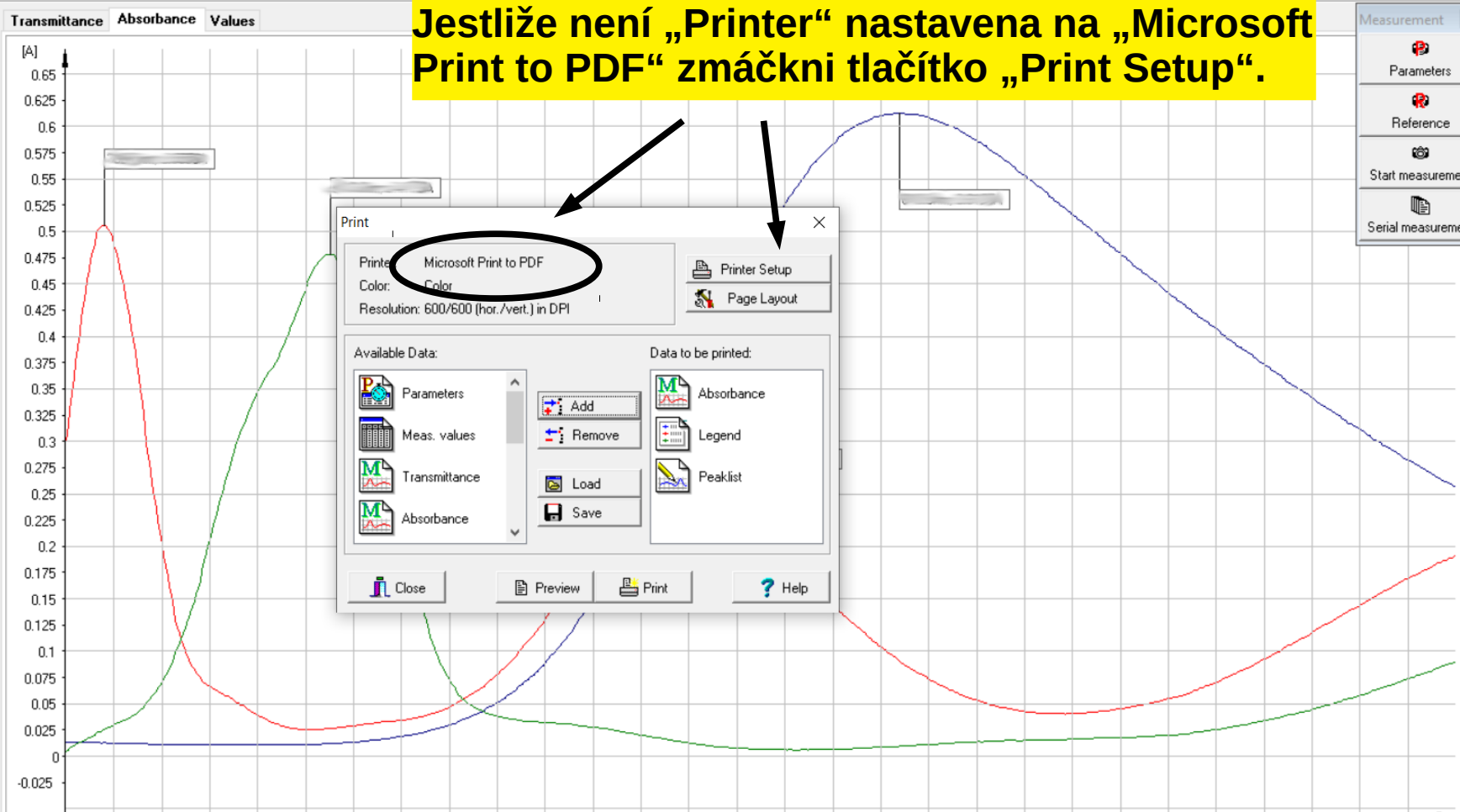
Nakonec zmáčkni tlačítko „Save“.



Samples

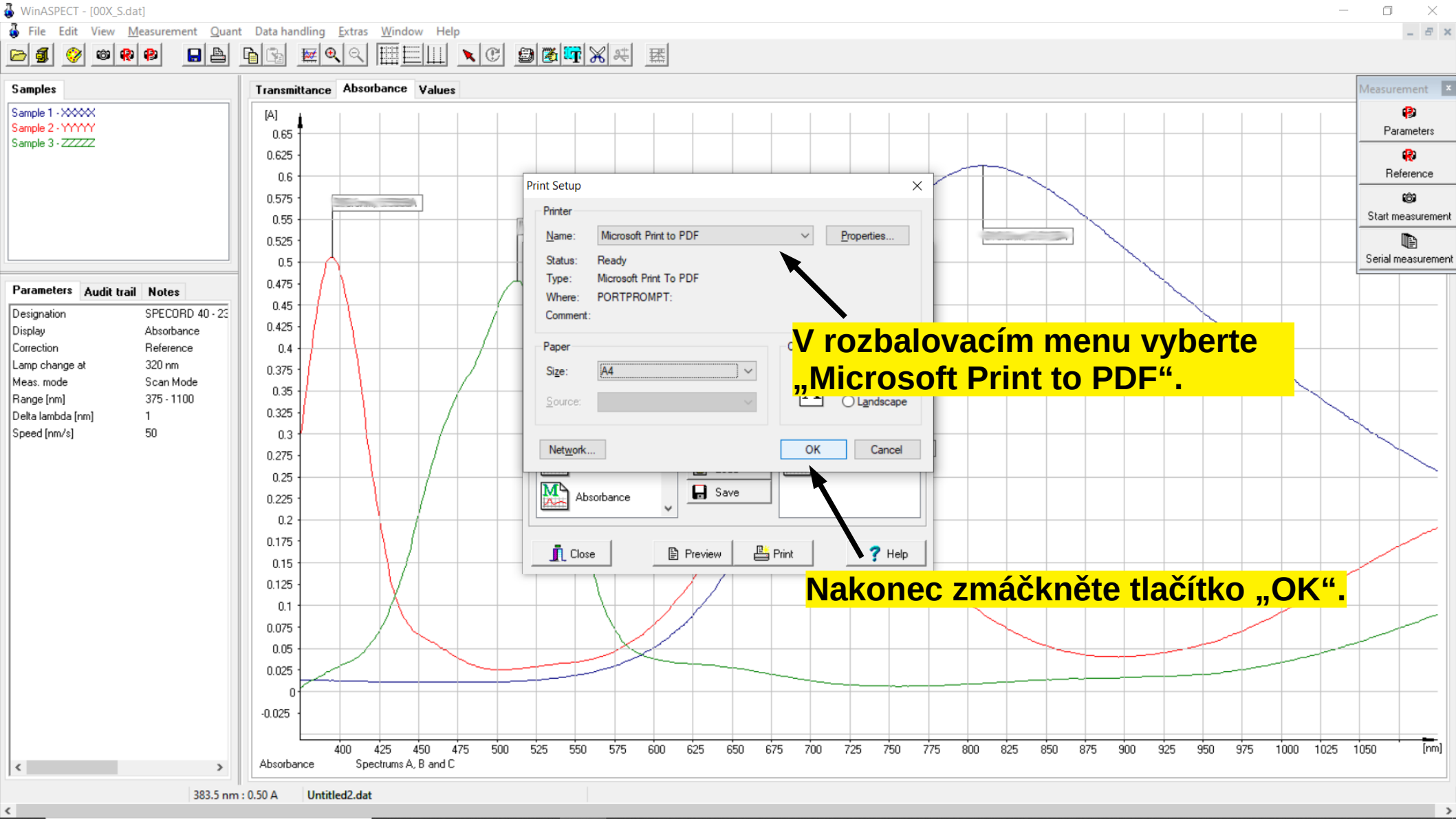
- Sample 1 - XXXXX
- Sample 2 - YYYYY
- Sample 3 - ZZZZZ

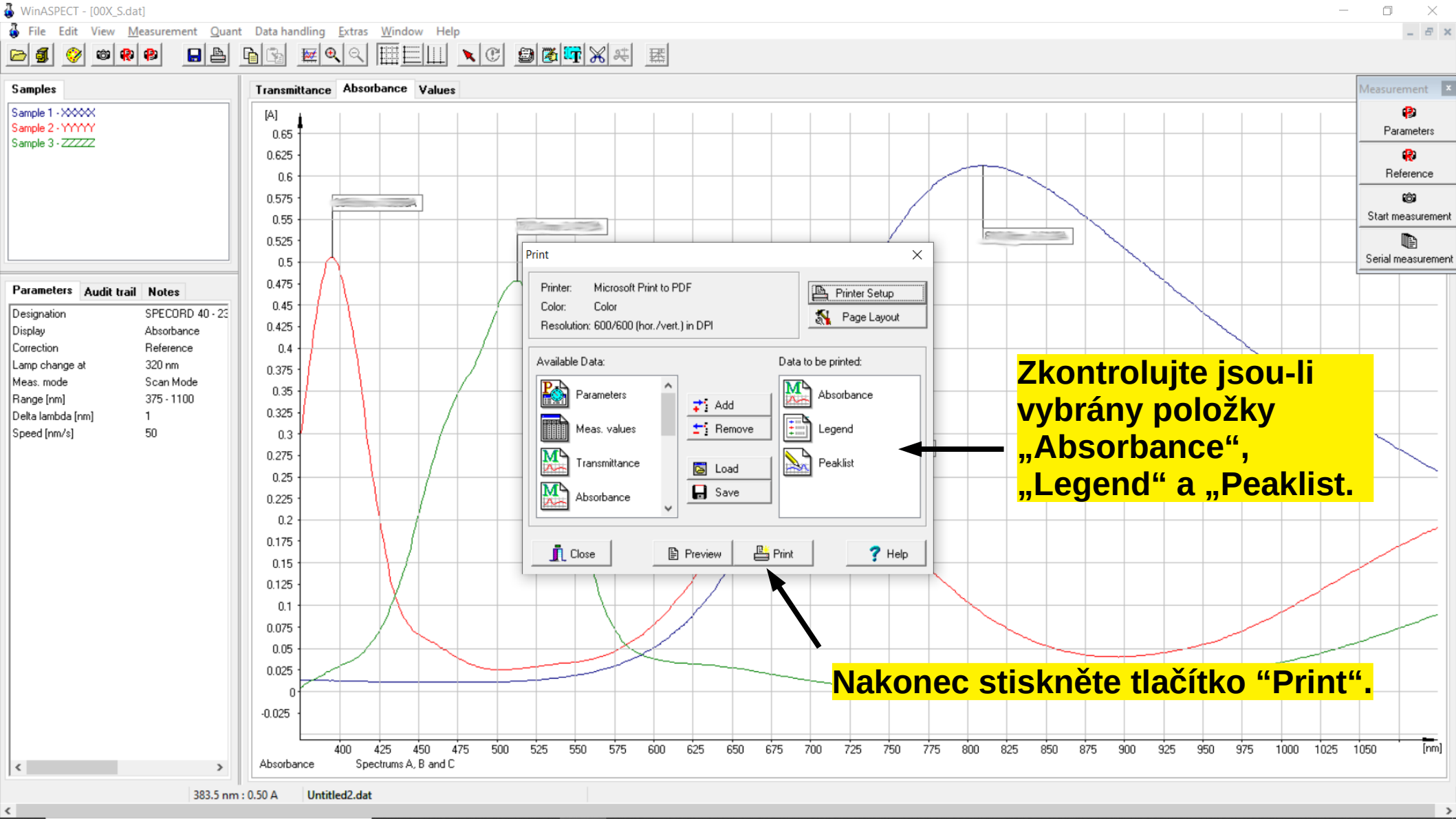
Parameters	Audit trail	Notes
Designation	SPECORD 40 - 20	
Display	Absorbance	
Correction	Reference	
Lamp change at	320 nm	
Meas. mode	Scan Mode	
Range [nm]	375 - 1100	
Delta lambda [nm]	1	
Speed [nm/s]	50	

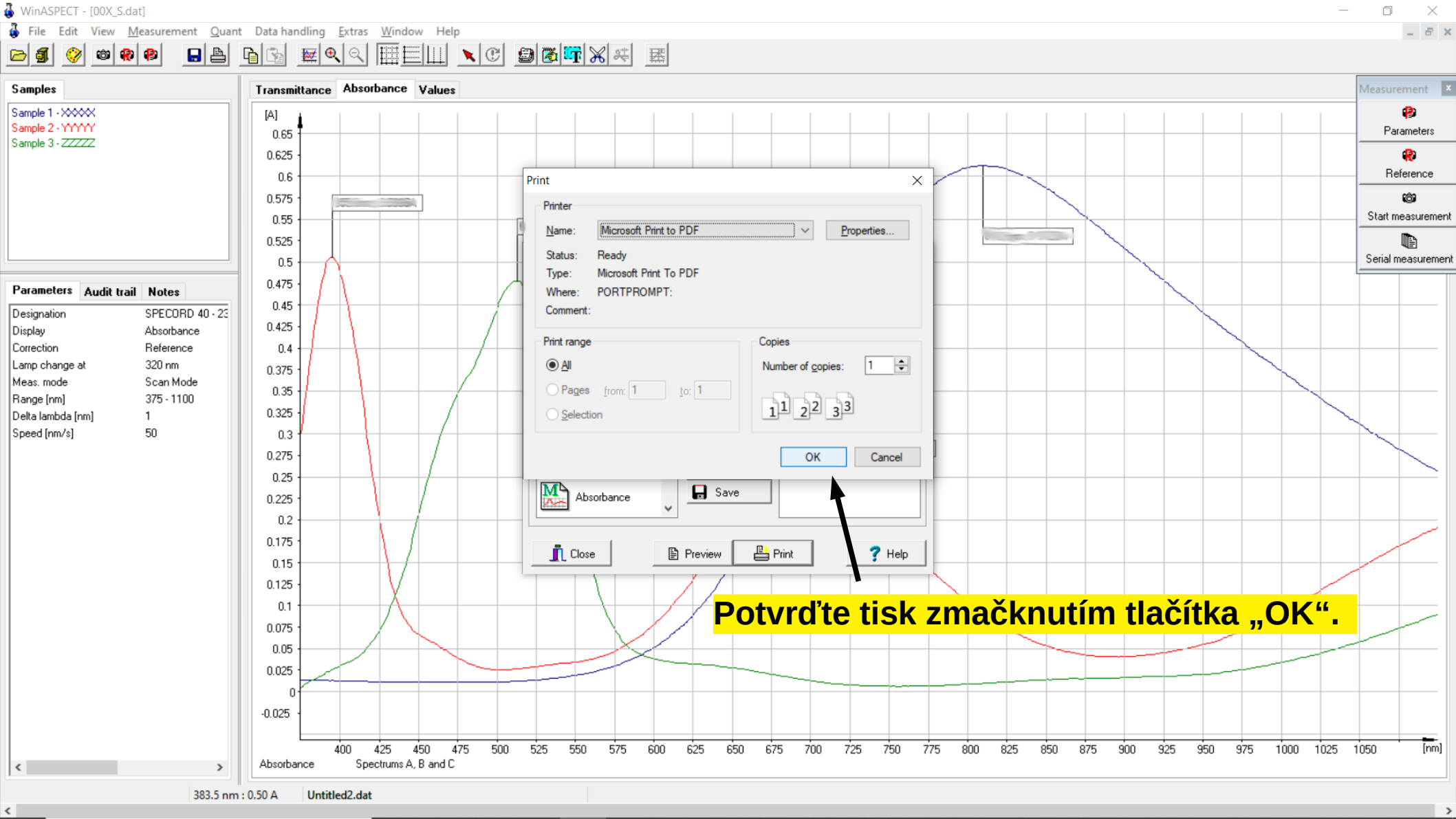


Jestliže není „Printer“ nastavena na „Microsoft Print to PDF“ zmáčkni tlačítko „Print Setup“.

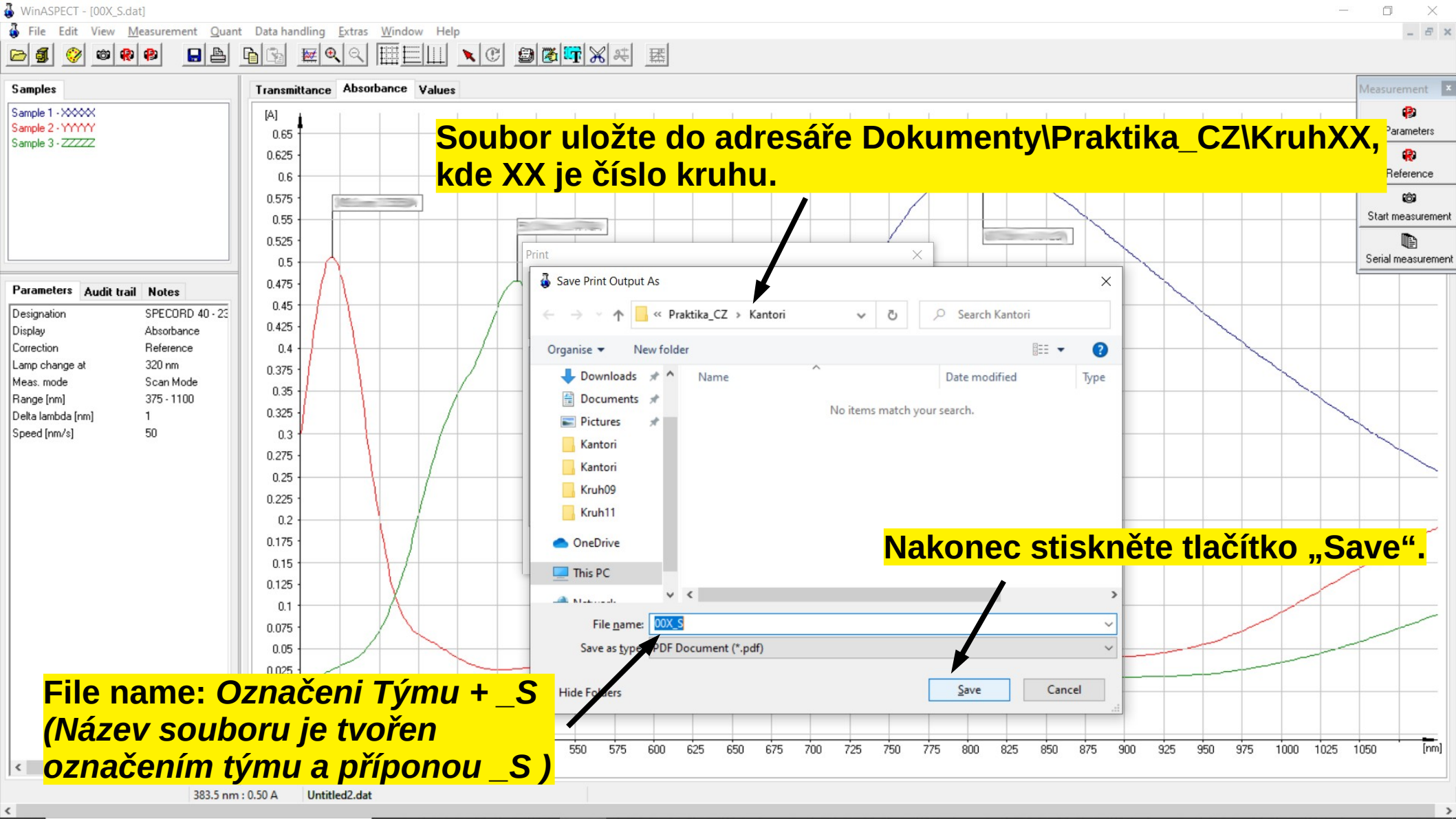
Jestliže je „Printer“ nastavena na „Microsoft Print to PDF“ přeskočte následující krok.

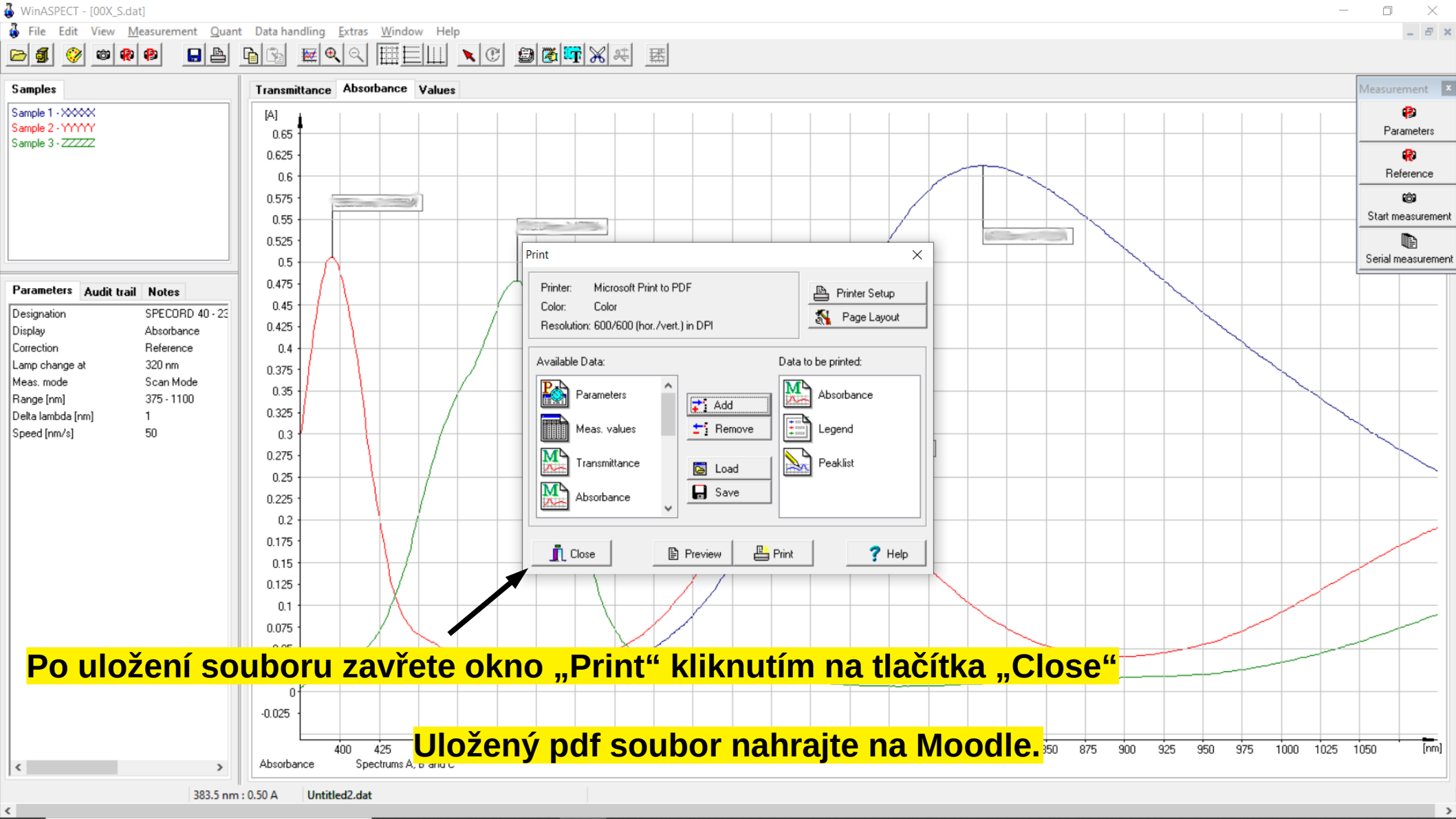






Potvrďte tisk zmačknutím tlačítka „OK“.





Po uložení souboru zavřete okno „Print“ kliknutím na tlačítka „Close“

Uložený pdf soubor nahrajte na Moodle.

Konec