Calculation of production tact time

Function   Calculation of production tact time for each coater

It is necessary to calculate the production tact time from the time of evacuation, pre-treatment such as ion beam cleaning, deposition and post-treatment such as cooling. This is important for management of production. Production time depends on coater's performance, deposition material and the condition.

This macro program enables to calculate the tact time by "one click", once the coaters, materials and deposition condition (i.e. deposition rate) are registered. Furthermore, it is possible to save above data as a file, and the management and use become easy.

Preparation   Copy of macro file (.BAS) and initial file (.fbi) to default directory, and configuration FILMSTAR to use this macro program

To use this macro program, it is necessary to copy following 2 files to the directory "Winfilm¥Basic32" and configure FILMSTAR.

    Macro file (.BAS)   : T_Calc_Tact06.BAS
    Initial file (.fbi)   : _Ini_Calc_Tact.fbi

Step 1   Input parameters to calculate production tact time

Execute this macro program, and then "Calculate Tact Time" window is opened (fig.1). Input parameters for calculation of production tact time.

From top left…
Pumping
Pumping time
Pre-process
Such as ion cleaning
Communication(1layer)
Communication time between each layer. Input time for one layer.
Post-process
Such as cooling, bent

From left…
Material
Material name
Sym
Material's symbol (H, L etc.)

Pre-melt
Tooling

Rate
Deposition rate

Fig.1 "Calculate Tact Time" window

Step 2　　　　　Calculation of production tact time

　　Click "Calculate" button on the "Calculate Tact Time" window, and then total thickness and production tact time are calculated (fig.2). However, if all symbols used in design are not registered correctly, the error message like fig.3 is displayed. You should input correct parameters again.

Fig.2 Calculation of production tact time on the "Calculate Tact Time" window

Fig.3 Error message

Step3   Load and save of all parameters

It is possible to load all parameters that are inputted as a file in step 1. Click "All parameters – Load / Save as …" button on "Calculate Tact Time" window (fig.4), and then the file dialog is opened (fig.5). Input a file name and save or load a file.
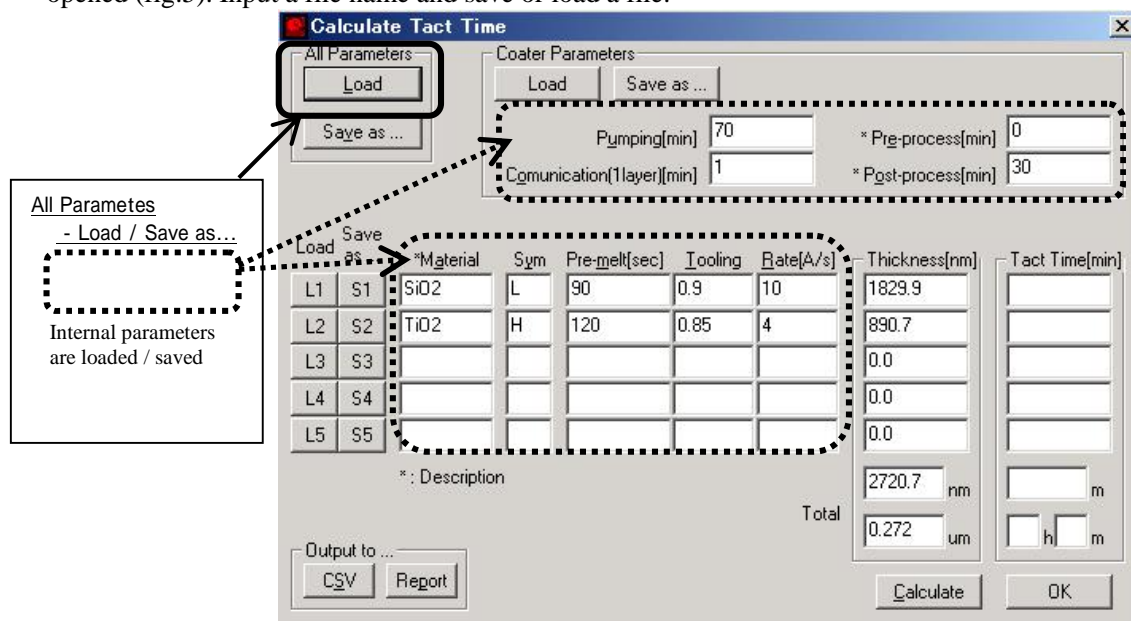

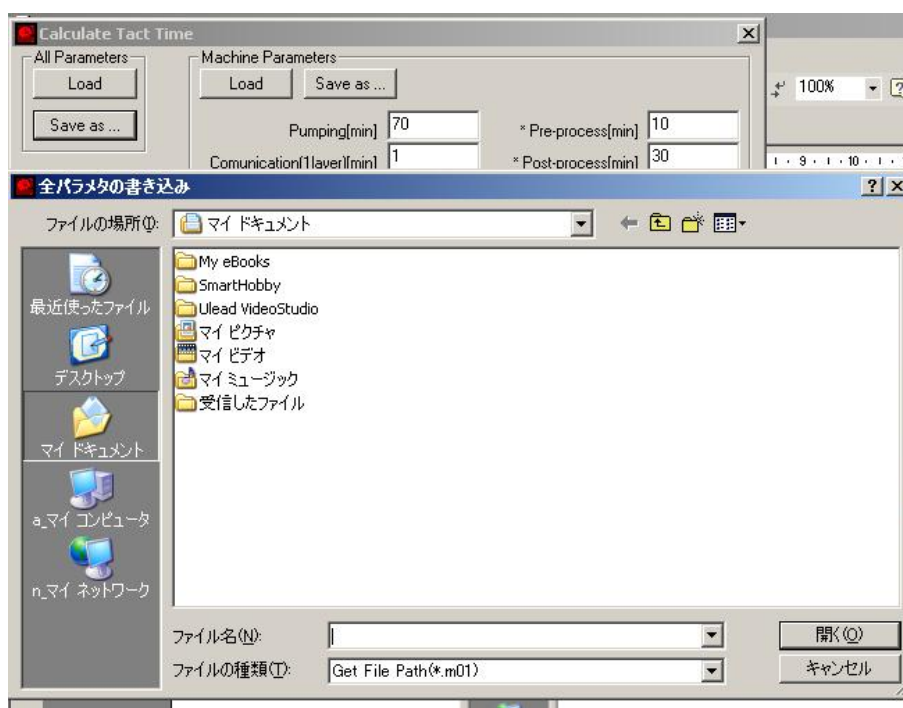Fig.4 Save and load of all parameters

Fig.5 File dialog that selects a saved file of all parameters

Step4   Save and load of coater parameters

It is possible to load coater parameters that are inputted as a file in step 1. Click "Coater parameters – Load / Save as …" button on "Calculate Tact Time" window (fig.6), and then the file dialog is opened (fig.7). Input a file name and save or load a file.
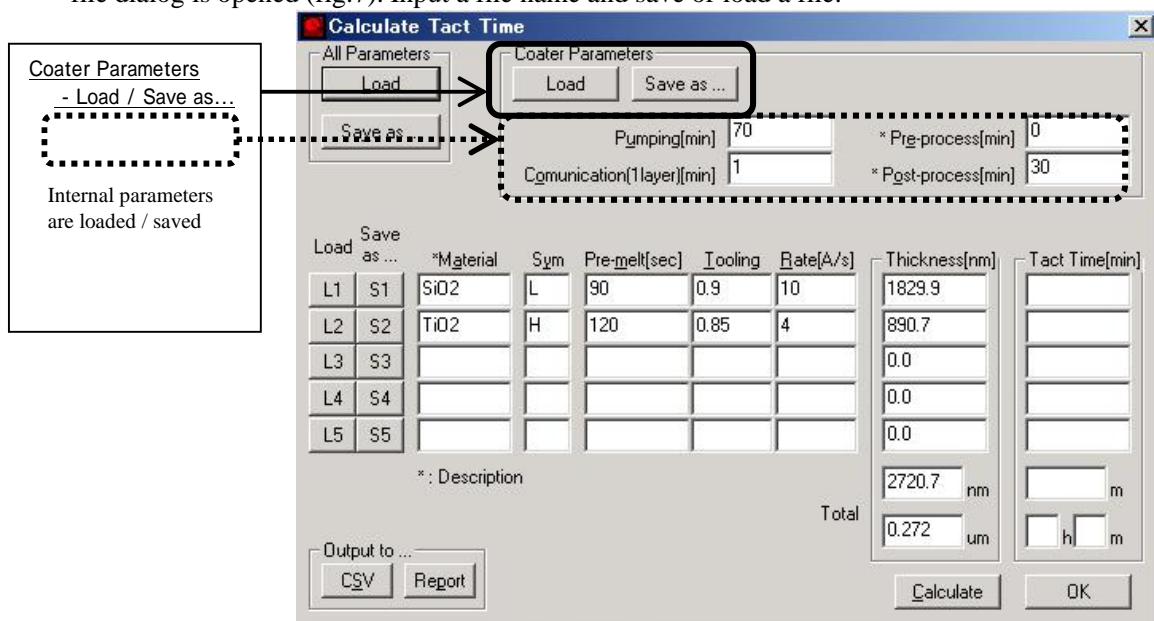
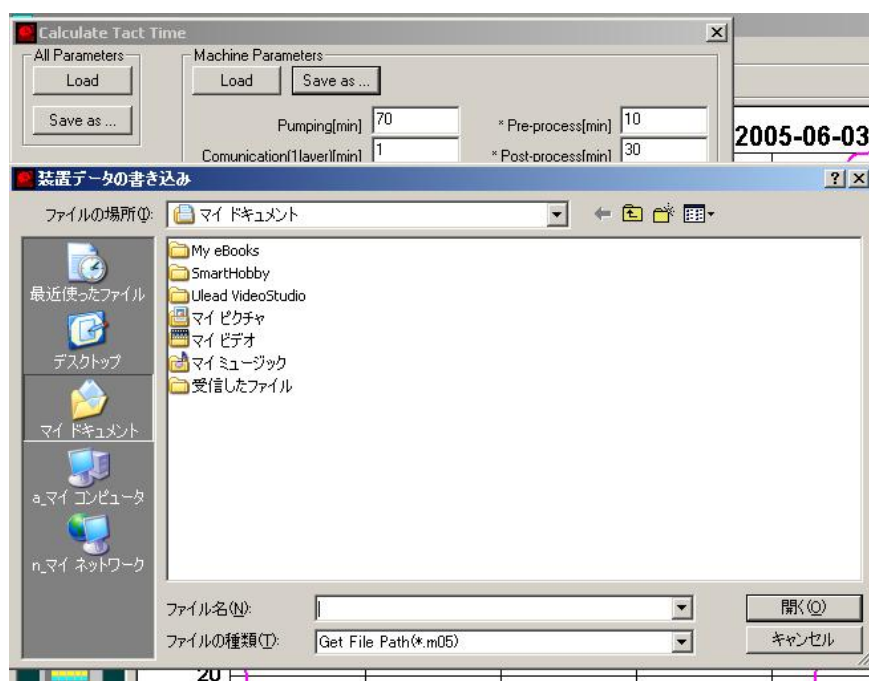Fig.6 Save and load coater parameters

Fig.7 File dialog that selects a saved file of coater parameters

Step 5   Save and load of material parameters

It is possible to load coater parameters that are inputted as a file in step 1. Click "Load / Save as …" button on "Calculate Tact Time" window (fig.8), and then the file dialog is opened (fig.9). Input a file name and save or load a file.
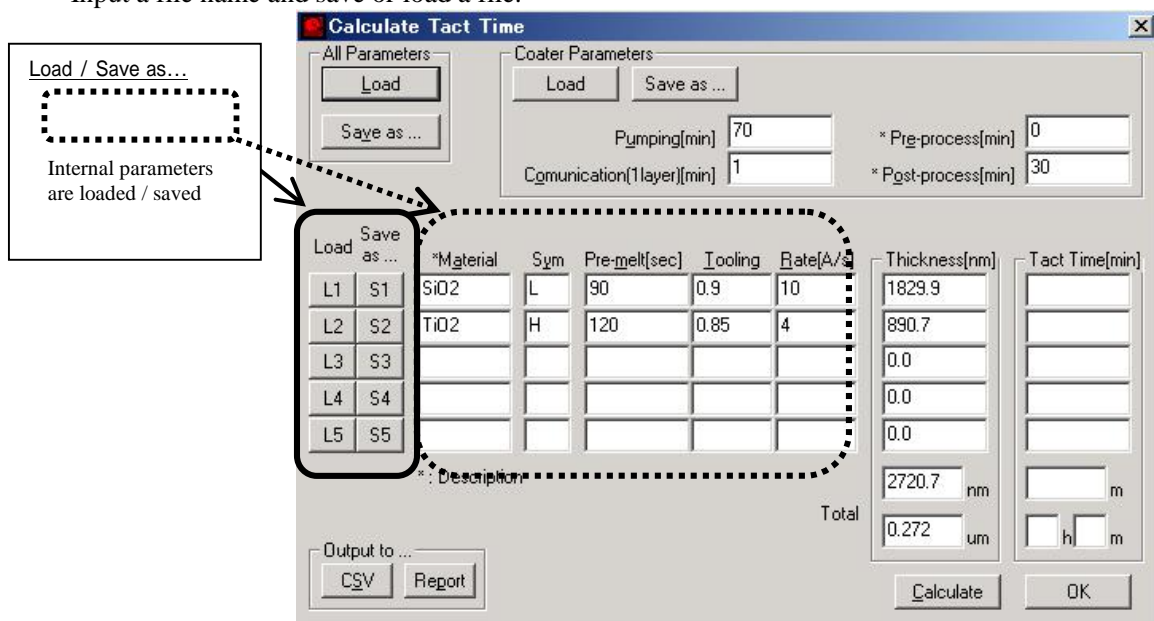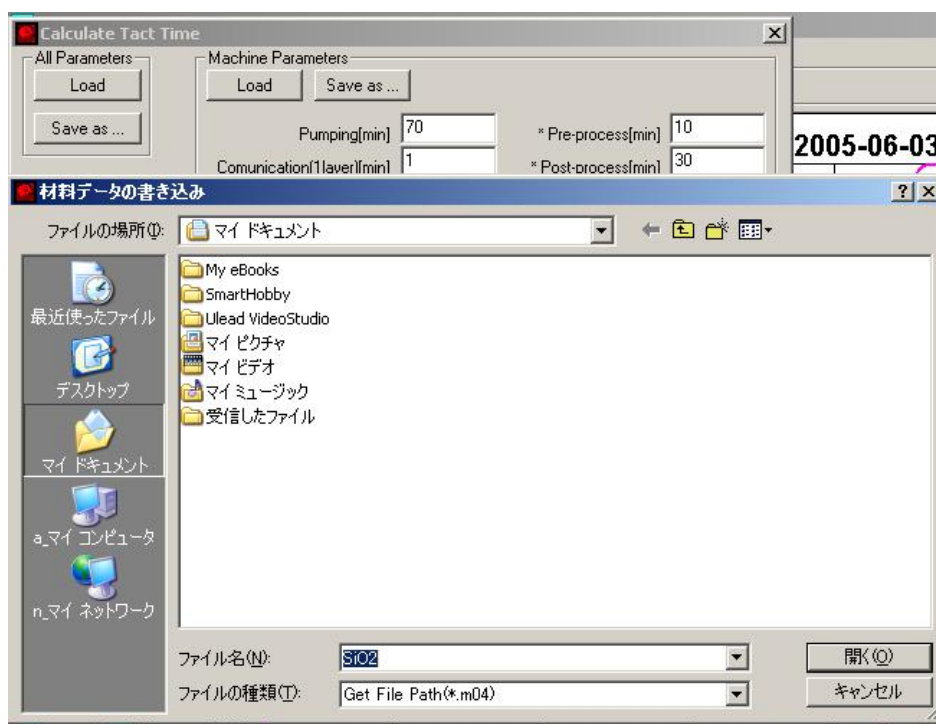

Fig.8 Save and load material parameters

Fig.9 File dialog that selects a saved file of material parameters

Step6   Save of the result as CSV file

It is possible to save the result of production tact time calculated in step 2 as a CSV file. Click "Output to … - CSV" button on "Calculate Tact Time" window (fig.10), and then the file dialog is opened (fig.11). Input a file name and save a file, then it is saved as CSV file like fig.12.
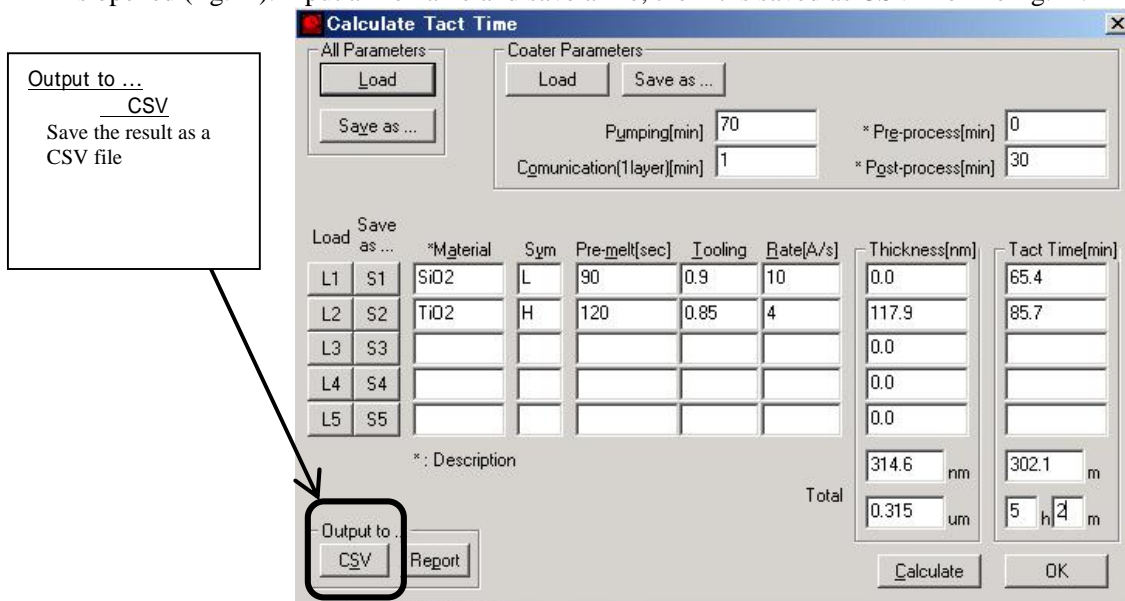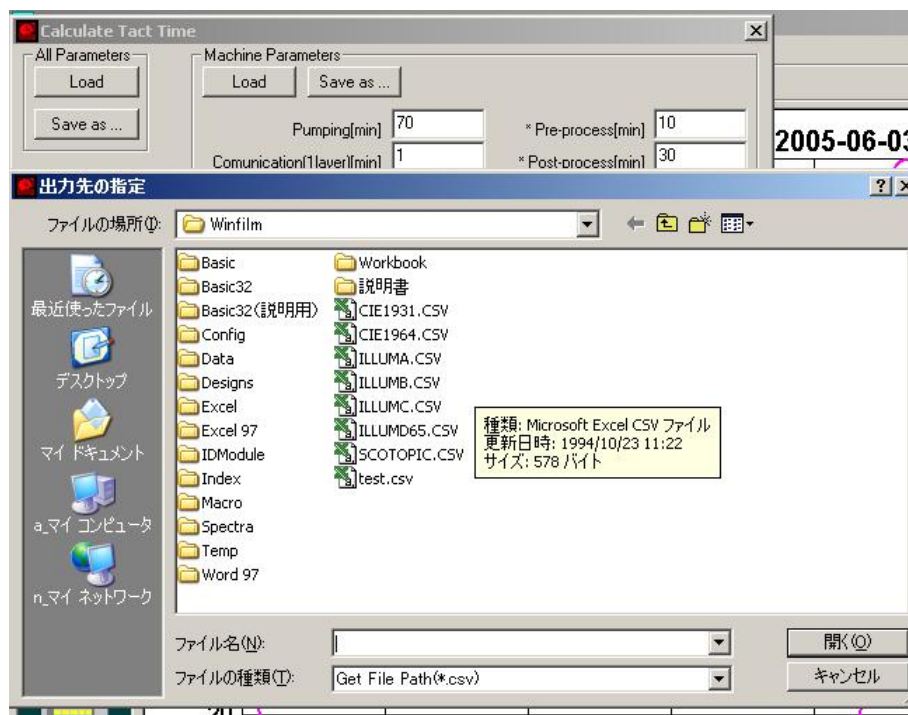

Fig.10 Save as a CSV file

Fig.11 File dialog that selects a saved CSV file

Microsoft Excel - test.csv

ファイル(F)　編集(E)　表示(V)　挿入(I)　書式(O)　ツール(T)　データ(D)　ウィンドウ(W)　ヘルプ(H)

Arial　　　　10

A1　　fx　General

	A	B	C	D	E	F	G	H
1	General							
2	Punpimg[min]	70						
3	Pre-processing[min]	10						
4	Comunication[min]	1						
5	Post-processing[min]	30						
6								
7	Material							
8		Symbol	Material	Rate[A/s]	Tooling	Thickness[nm]	Tact time[min]	
9	1	L	SiO2	10	0.9	1829.92	65.38741	
10	2	H	TiO2	4	0.85	890.7499	85.66422	
11	3			-1	-1	0	0	
12	4			-1	-1	0	0	
13	5			-1	-1	0	0	
14								
15	Total							
16	Thickness[nm]	2720.67						
17	Tact time[min]	302.0516						
18								

Fig.12 Saved CSV file

<u>Step 7　　Output to report</u>

It is possible to insert the result into the report. Click "Output to … - Report" button on "Calculate Tact Time" window (fig.13). Then click "File　Report Generator" on menu bar on FILMSTAR main window, you can see the total thickness and the production tact time are inserted to the report (fig.14).
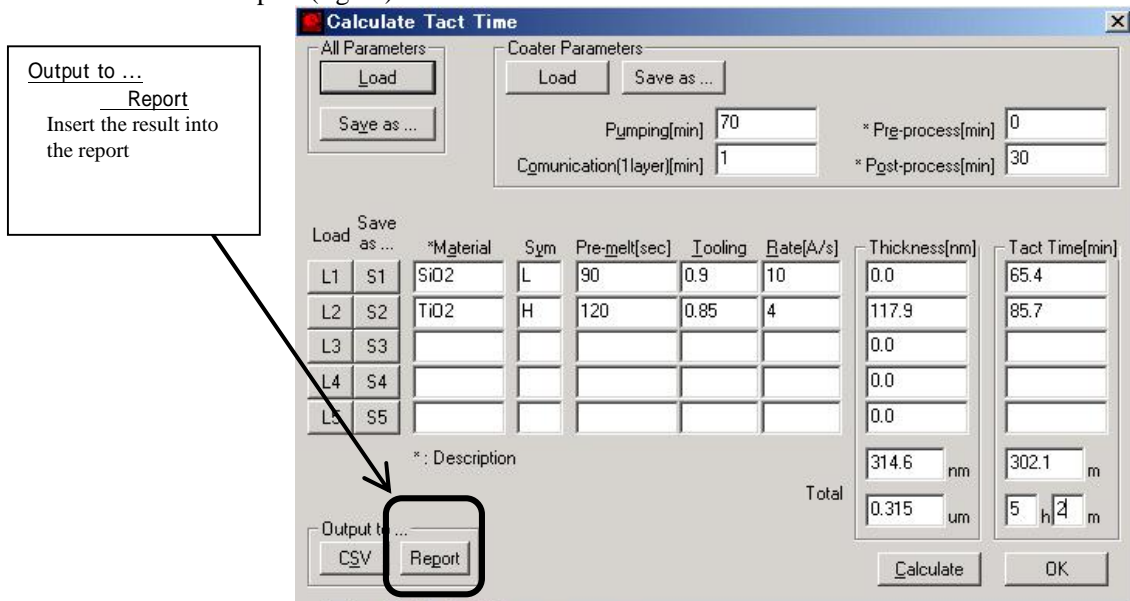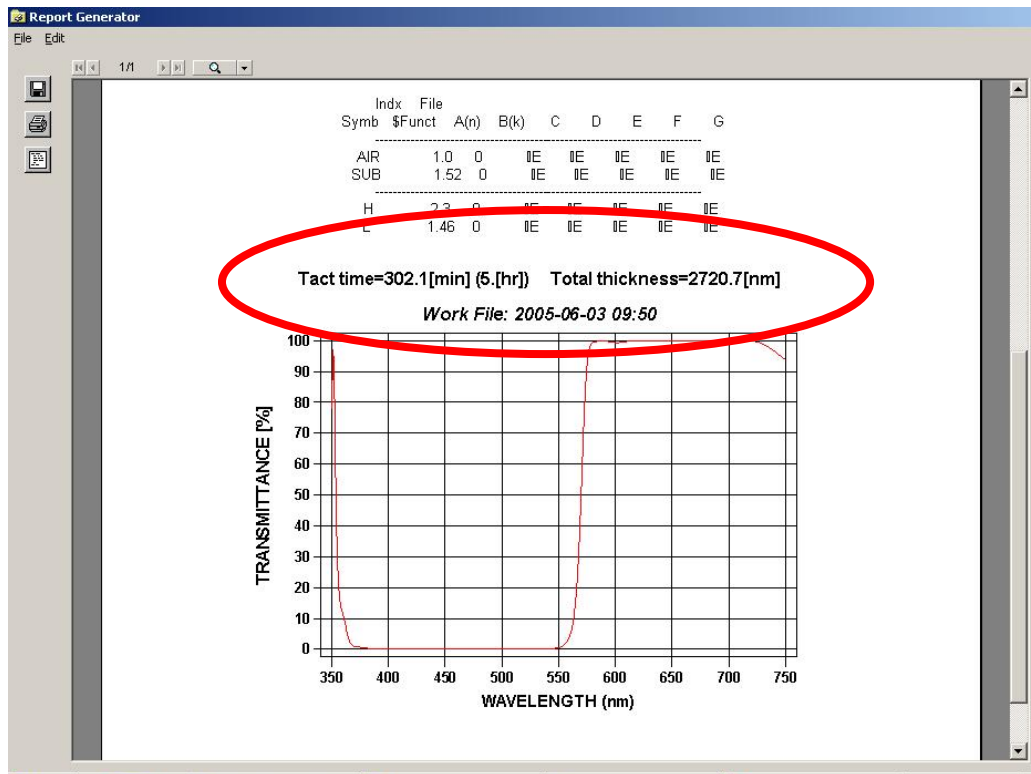

Fig.13 Insert to report

Fig.14 Total thickness and production tact time inserted the report