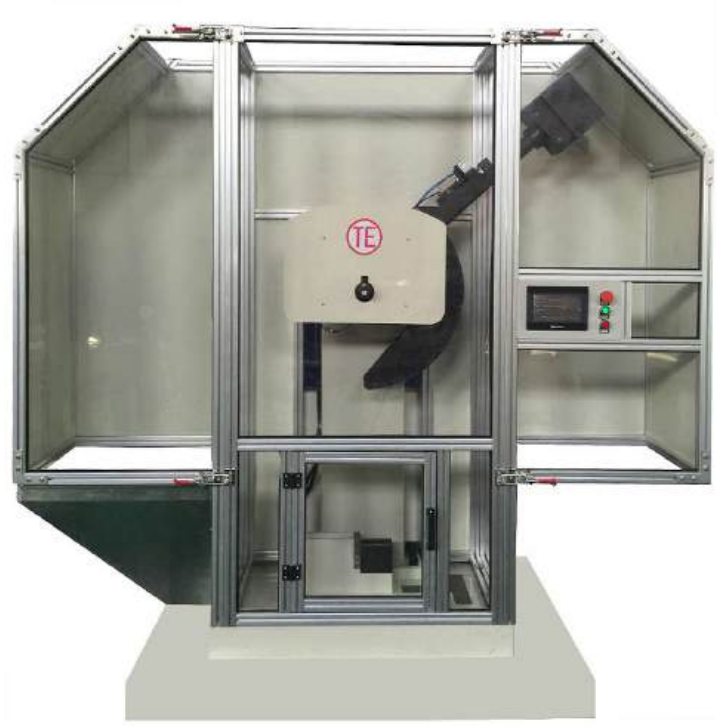
Model JWT-406 Computer & LCD Touch Screen Control Pendulum Impact Testing Machine



Applications:

JWT series superior metallic pendulum impact testing system is strictly designed according to international standards ISO148, ASTM E23 and EN10045. It is mainly used to determine the anti-impact capability of metal materials under dynamic load and capable of doing a large number of impact tests continuously. Adopting the imported programmable logic controller (PLC), it can realize the test process control and test data collection by the computer software program or the digital display touch screen controller. The test data can be used for further data analysis, storage and printing. An aluminum shield with transparent tempered glass covers the load frame for safe operation. It is essential quality control equipment for metal material manufacturers and QC department, and also a necessary instrument of research institutes for new materials research.

Applied Standards

ASTM E23, ASTM E1820, ASTM E2298, ISO 148, EN10045, GB/T 3808, GB/T 229, JJG145, JJG 609

Features:

1. Load frame adopts integral design and one body casting process with features of light weight, high stiffness and no deformation. Supporter of pendulum adopts single beam structure and supporting axle get uniform force, which makes deformation quite little at the moment of impact, and robust pendulum arm can also reduce the deformation of impact moment. Anvil and base have integral structure and is designed strictly as per ASTM E23, which greatly reduces friction between specimen and anvil so as to guarantee the correctness of test results.
2. Pendulum raising system: it consists of motor, reducer and disk friction clutch etc. with features of working at lower noise, stable running, quick clutch & reliable brake etc. Conventional motors with mature technology & good reliability; Reducer is using worm wheel gear structure, with smooth operation& good output torque; The friction clutch with prompt action, good reliability and low noise.
3. Pendulum releasing& locking device: it mainly includes pneumatic release cylinder, pendulum drawing board, reset spring, locking baffle and locking pins etc; In the working procedure, the pendulum drawing board reaches

out due to the reset spring, which will stop and stuck the pendulum at the releasing position; when the pendulum is to be released, the release cylinder will take in the air, driving the pendulum drawing board retreat, the pendulum drawing board and pendulum will separate, thus releasing the pendulum. When pendulum is to be placed at the releasing position, the pendulum drawing board will be set to reset position, thus stop and stuck the pendulum; it will not release the pendulum due to electrical problem or software malfunction, thus improving the equipment operation safety.

4. Compared to the traditional impact tester, JWT superior impact tester adopts friction disc structure clutch instead of jaw clutch, there is no sound of the collision jaw when the jaws are combined as in the traditional impact tester, and it is with extremely low noise; the pendulum releasing mechanism adopts pneumatic cylinder structure, even no noise at work.

5. All test actions is controlled by the PLC, digital display with variety of control methods, such as the LCD touch screen controller and the computer, the upper and lower control can be achieved; Simple but powerful software operation.

6. Torsion angle acquisition adopts high pulse optical encoder, minimum resolution is up to 0.003 times of the full scale, to ensure the accuracy of the impact energy.

7. Fully enclosed safety shield can effectively prevent breakage sample splash, to ensure operation safety, and can keep the testing personnel away from the interior of the test machine. Also it is equipped with Interlock door limit switch. The safety shield frame is made of aluminum alloy, with transparent tempered glass for easy observation.

8. Different strikers can be equipped according to different testing requirements. The pendulum can match multiple strikers, including R8 striker under ASTM E23-07a, R2 striker under ISO148 or high precision R8 strain gauged striker (for instrumented impact configuration, optional). One pendulum can simultaneously match a variety of strikers, to meet a variety of test methods, eliminating the frequent replacement of the pendulum.

9. This impact tester can be equipped with different anvils under different testing methods, such as Charpy impact (standard), Izod impact (optional), brugger impact and tensile impact (optional);

10. Low blow impact fixture (optional): with this fixture, realize lower impact energy and impact speeds at different heights, please refer to the right picture.

Specifications:

- Impact type: Chapry (standard), **Izod & tensile impact (optional)**
- Impact energy: 406J
- Hammer weight: approx. 27.5kg
- Impact velocity: 5.5m/s (variable if with optional low blow fixture)
- Raised angle: 132º (Variable if with optional low blow fixture)
- Drop height: 1.52 meters
- Resolution: 0.08J
- Standard anvil span: 40mm
- Round angle of striker: R1-1.5mm
- Striker thickness: 16mm;
- Round angle of striking edge: R2 as per ISO 148 (standard)
  R8 as per ASTM E23 (optional)
- Size of specimen: 10 x 10 x 55mm (7.5/5/2.5 x10x55m are optional)
- Power supply: 3 phs, 380V, 50/60Hz, 2kW
- Load frame dimension: 1000x795x1512mm(2280x830x2060mm if with safety cover)
- Net weight: 1200Kg
- Control: computer and LCD touch screen control

Charpy support for the axial, Disc clutch

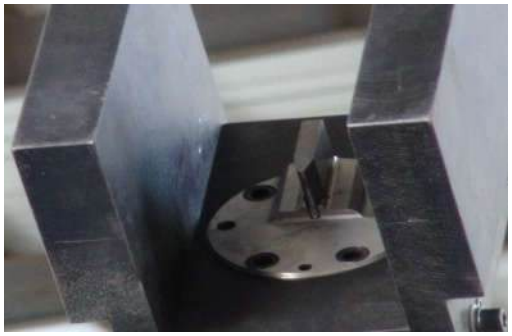
All electronic parts are Schneider brand

U type suitable for Charpy, Izod and Tensile-impact

Charpy Anvil

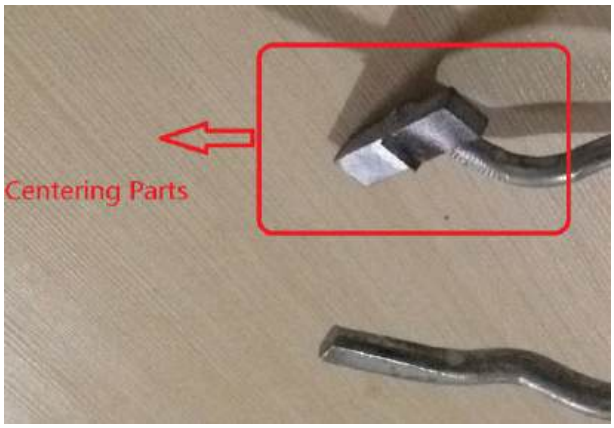
Main Accessories:

1. 406J Pendulum for Charpy Test with strikers ISO148 R2 and ASTM E23 R8: 1 set



2. Izod striker shown in the purple circle 1 set

3. Tongs for clamp the sample with centering functions: 1 set



4. Anils for Charpy and Izod: 1 set each

5. PLC control system

6. Full-enclosed aluminum safety cabin with limit switch

7. Computer & software / digital LCD touch screen controller

Instrumented System (optional)

Instrumented striker:

We can supply all kinds of instrumented strikers that conform to the international standards. The striker can be easily exchanged with other striker geometries or non-instrumented or instrumented striker and the anvil assembly can be unbolted from the base, replaced among the Charpy, Izod, tensile anvil sets. Instrumented striker adopts the world class top technologies of strain type strikers.

Calibration:

Suitable for true same way with the USA calibration method, can easily calibrate any instrumented impact testing machine (pendulum impact machine, drop weight tear testing machine) import from Europe, USA.

Application Range:

Instrumented technologies can be applied in the following machines:

1. Metallic Materials Pendulum Impact Tester- Charpy, Izod, Tensile.

ISO 148, ISO14556, ASTM E23, EN 10045, GB 17948

2. Metallic Materials Drop Weight Tear Impact Tester--- ASTM E436

3. Plastic Materials Pendulum Impact Tester – Charpy, Izod, Tensile---ISO 179, ISO180

4. Plastic Materials Drop Weight Impact Tester

ISO 6603, 7765, 3127, 8256; ASTM D3763, D4272, D5628, D2444, 7136, 7192

Realize:

According to the customers' situation, we can provide the following products or services:

1. New Machine– Customer has no impact testing machine, want a new one with instrumented technologies.

2. Calibrate -- Customer has a instrumented testing machine of international brand bought abroad, and the calibration is difficult, OK, the calibration tools are already for you, to give you the service for the annually calibration.

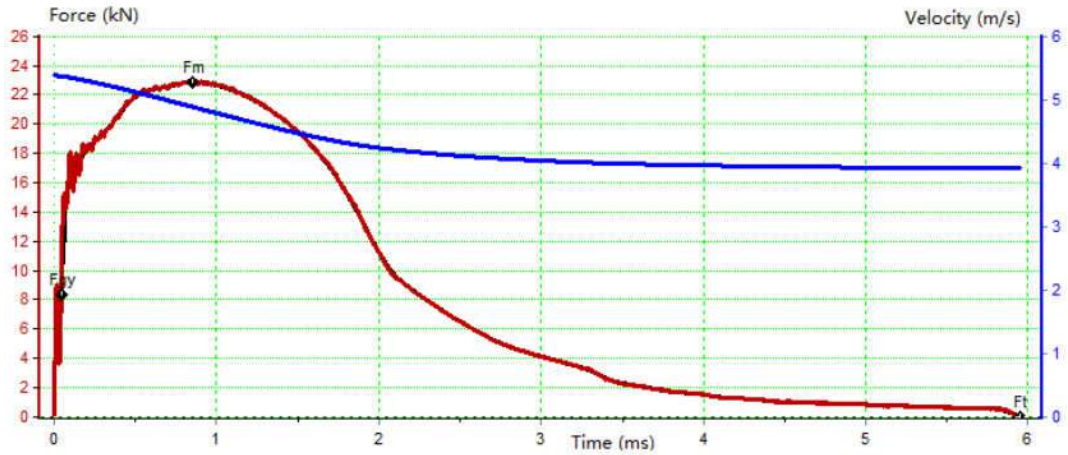
3. Update -- Customer has an old model of impact testing machine, he wants to update it to possess the capability of instrumented technology.

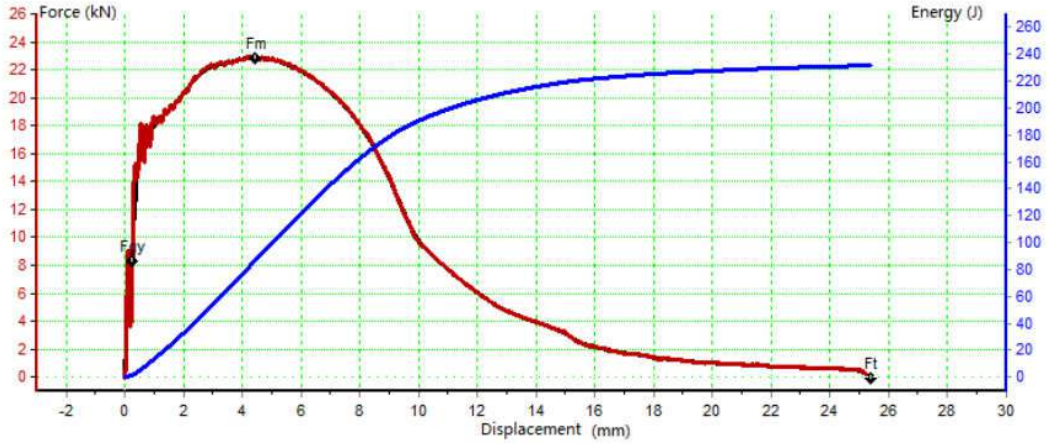
4. Maintenance – Customer has instrumented tester, but it does not work. OK, we will help you let it work, or renew some parts, or partial upgrade.

Features:

- High precision strain gauged type striker make the calibration simple, easy, accurate, flexible.
- Sampling frequency 1,000,000 points/s
- Graph of any combination of Load (Time, Velocity, Displacement, Energy) Vs. Time (Load, Velocity, Displacement, Energy)
- Provide all the obvious feature points as Yield(Fgy, Sgy, Wgy), Max(Fm, Sm, Wm), (Fiu,Siu,Wiu), (Fa,Sa,Wa), (St, Wt), (Wi, Wp)

Examples for Instrumented Graphics:





Annex-1: LCD touch screen controller

It can be shown in local language


DELTA
Functions
Chinese-中文
English
Russian-Русский
Italian- Italiano
Portuguese-Português
Spanish-Español
French-Français
Machine Configuration
Pendulums
Swing Period
Energy Loss Detection
PLC I/O Port Redirection
Batch Specimens
Pendulum Control
Login
Logout
Return


DELTA
0.000
0.00
0.000
0.00
150.00
117.03
0.00
ON
OFF
Batch
K [J]
Kc [J]
1 0.00 0.000
2 0.00 0.000
3 0.00 0.000
4 0.00 0.000
5 0.00 0.000
6 0.00 0.000
7 0.00 0.000
8 0.00 0.000
9 0.00 0.000
10 0.00 0.000
Statistics
K [J]
Min 0.00
Max 0.00
Mean 0.00
Repeat 0.00
Std Dev 0.00
RSD (%) 0.0
Rise
Pin Back
Impact
Drop
Angle Clear-Set
Setup

Annex-2: Software introduction for PC

Functions:

- Windows platform, screen display, operating by mouse;
- If need print out the test report, then Microsoft Office 2000 at least needed
- The software displays two ranges of Impact Energy after calibration.
- Recording test results of Impact Energy, Impact Toughness etc. Also calculate the result of Min, Max, Mean, Standard Deviation of batch test
- Test result can be automatic calculated.
- Can automatically measure the swing period of 100 times
- Support multi language if needed
- Support test report into Microsoft Word2003 and Excel2003 or higher version.

Software and hardware requirements

- TE self-developed built-in PLC controller

Computer: Dell, with the following configuration: Dell, Intel Pentium G3250 Dual-core (2 Core) 3.20 GHz, 3MB processor, 2GB, DDR3 1600MHz, SATA 7200RPM, HD 500G, 16X DVD-ROM Drive, Windows 8.1 basic system 64bit with license; 19inch screen LED monitor, photoelectrical mouse, and multiple keyboard;

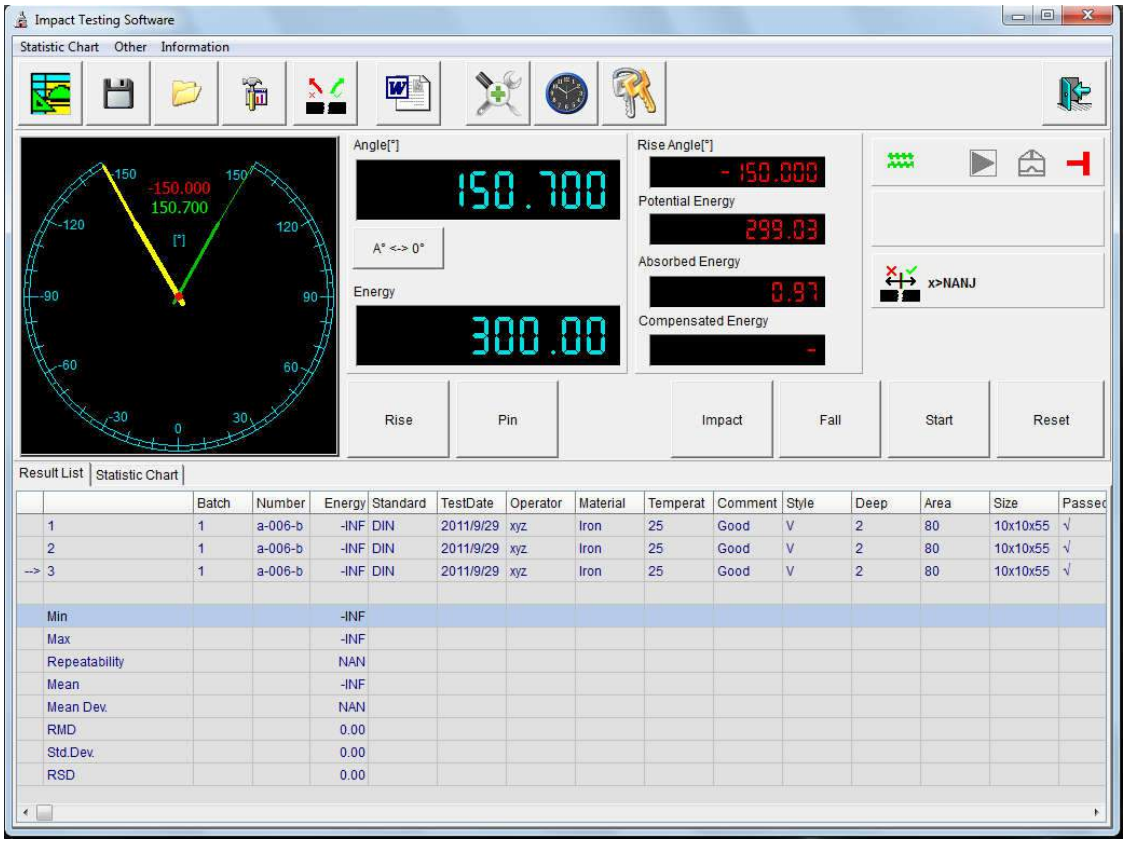
Software: English **& Spanish** Version (For details, please refer to below)

ImpactStar Software (non-instrumented system):

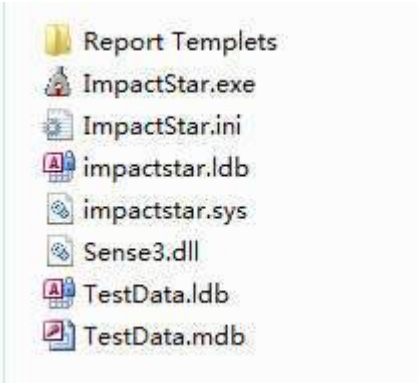
Main Windows

Main window is the control center of the programs, which taking charge of managing each function window and

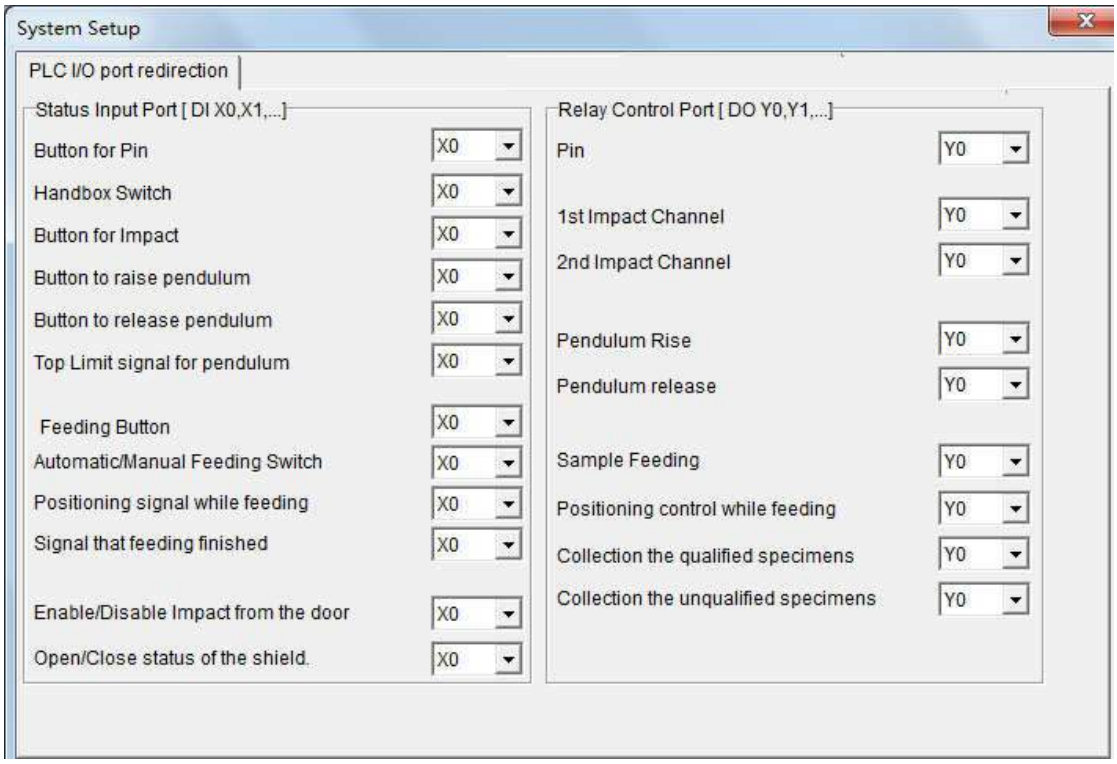
test result management.



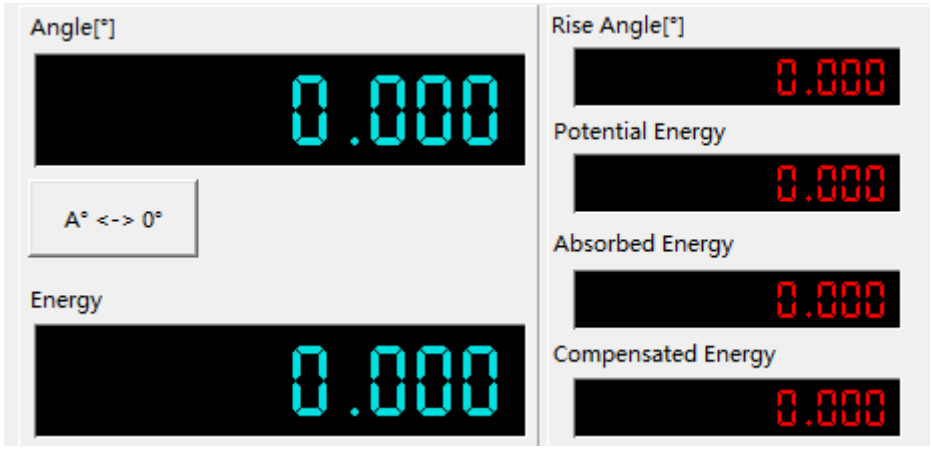
1. Green software with no installation, and can be used directly after copied



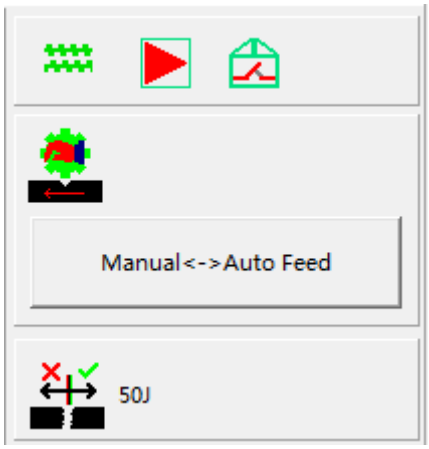
2. PLC saves all parameters of the impact tester, so user needn't set complex parameters again under software initializing.



3. Analog dial in software interface exactly shows the position of pendulum in real time, which is very convenient for operators to observe pendulum position. Energy data are displayed in real time.



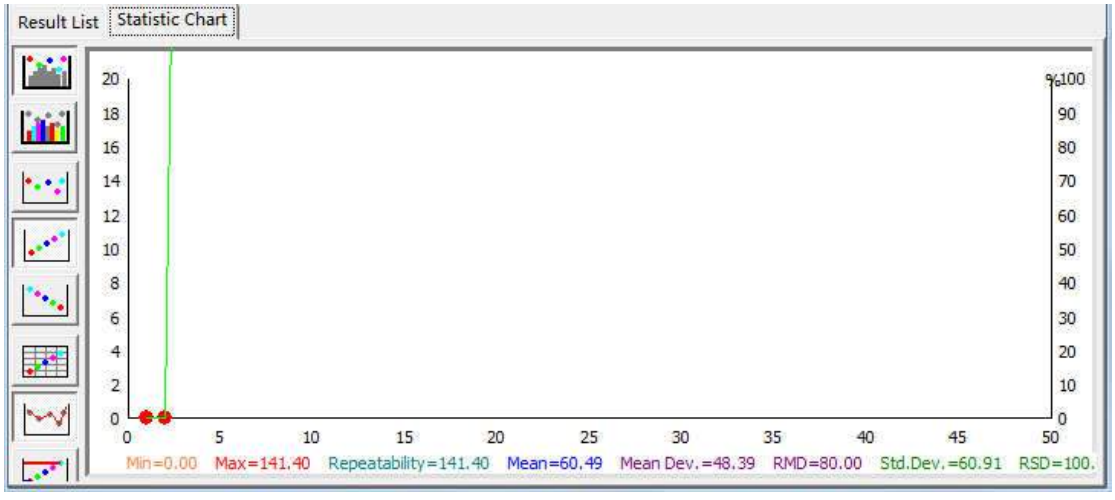
4. The condition icon shows in real time the communication condition of controller, pin position condition, test start or stop condition, auto specimen feeding condition, qualified specimen judgment etc.



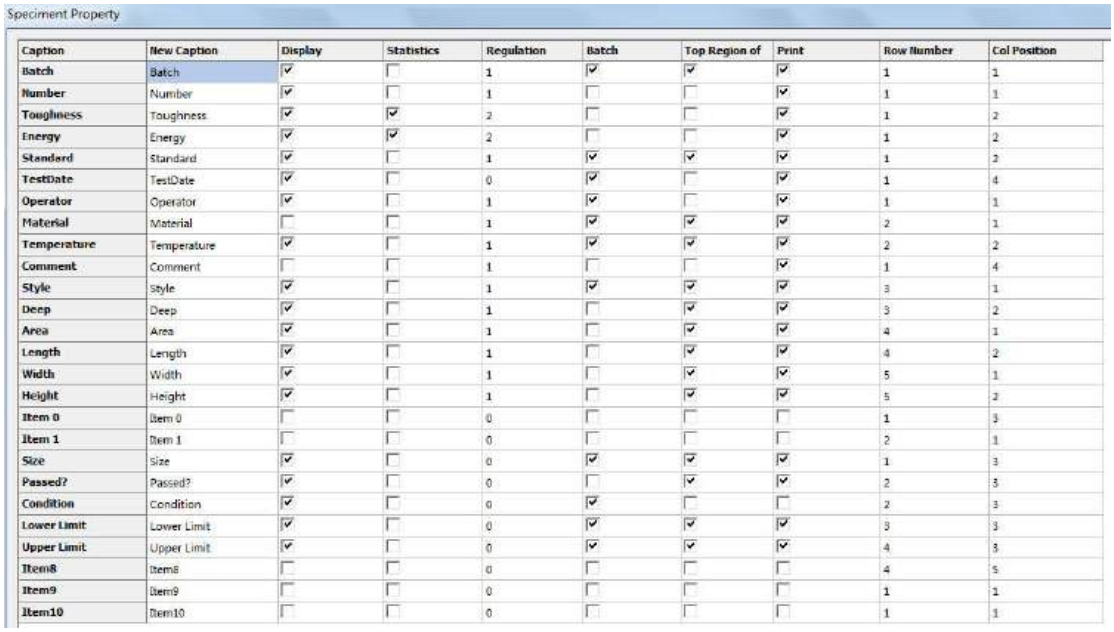
5. Support batch tests and batch test data statistics and analysis, including max. value, min. value, average value, standard error, average error, relative standard error, repeatability etc.

		Batch	Number	Toughness	Energy	Standard	TestDate	Operator	Temperature	Style	Deep	Area	Length	Width	Height	Size	Passed?	Condition
-->	1	1	a-001-b	0	0	ISO147		xyz	25	V	2.01	60.9	55	10	8.1	10x10x55	×	√ > Lowe
	2	1	a-001-b	0	0	ISO147		xyz	25	V	2.01	60.9	55	10	8.1	10x10x55	×	√ > Lowe
	3	1	a-001-b	0	0	ISO147		xyz	25	V	2.01	60.9	55	10	8.1	10x10x55	×	√ > Lowe
	Min			0.00	0.00													
	Max			0.00	0.00													
	Repeatability			0.00	0.00													
	Mean			0.00	0.00													
	Mean Dev.			0.00	0.00													
	RMD			0.00	0.00													
	Std.Dev.			0.00	0.00													

6. Test data statistics report, including point chart, bar chart, line chart etc..

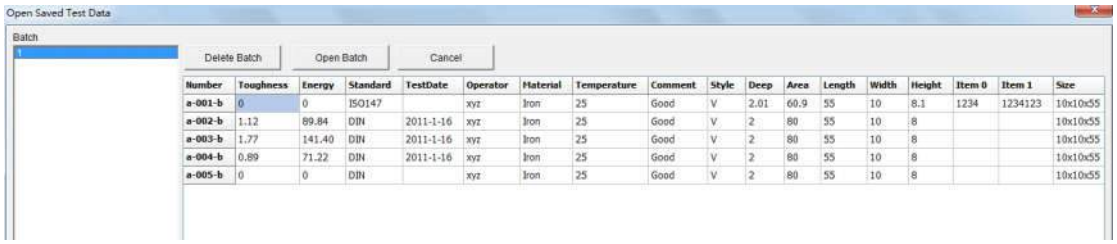


7. User can define and add specimen information items.


Speciment Property

Caption	New Caption	Display	Statistics	Regulation	Batch	Top Region of	Print	Row Number	Col Position
Batch	Batch	☑	☐	1	☑	☑	☑	1	1
Number	Number	☑	☐	1	☐	☐	☑	1	1
Toughness	Toughness	☑	☑	2	☐	☐	☑	1	2
Energy	Energy	☑	☑	2	☐	☐	☑	1	2
Standard	Standard	☑	☐	1	☑	☑	☑	1	3
TestDate	TestDate	☑	☐	0	☑	☐	☑	1	4
Operator	Operator	☑	☐	1	☑	☐	☑	1	1
Material	Material	☐	☐	1	☑	☑	☑	2	1
Temperature	Temperature	☑	☐	1	☑	☑	☑	2	2
Comment	Comment	☐	☐	1	☐	☐	☑	1	4
Style	Style	☑	☐	1	☑	☑	☑	3	1
Deep	Deep	☑	☐	1	☐	☑	☑	3	2
Area	Area	☑	☐	1	☐	☑	☑	4	1
Length	Length	☑	☐	1	☐	☑	☑	4	2
Width	Width	☑	☐	1	☐	☑	☑	5	1
Height	Height	☑	☐	1	☐	☑	☑	5	2
Item 0	Item 0	☐	☐	0	☐	☐	☐	1	3
Item 1	Item 1	☐	☐	0	☐	☐	☐	2	1
Size	Size	☑	☐	0	☑	☑	☑	1	3
Passed?	Passed?	☑	☐	0	☐	☑	☑	2	3
Condition	Condition	☑	☐	0	☑	☐	☐	2	3
Lower Limit	Lower Limit	☑	☐	0	☑	☑	☑	3	3
Upper Limit	Upper Limit	☑	☐	0	☑	☑	☑	4	3
Item8	Item8	☐	☐	0	☐	☐	☐	4	5
Item9	Item9	☐	☐	0	☐	☐	☐	1	1
Item10	Item10	☐	☐	0	☐	☐	☐	1	1

8. Test results storage function.


Open Saved Test Data

Batch

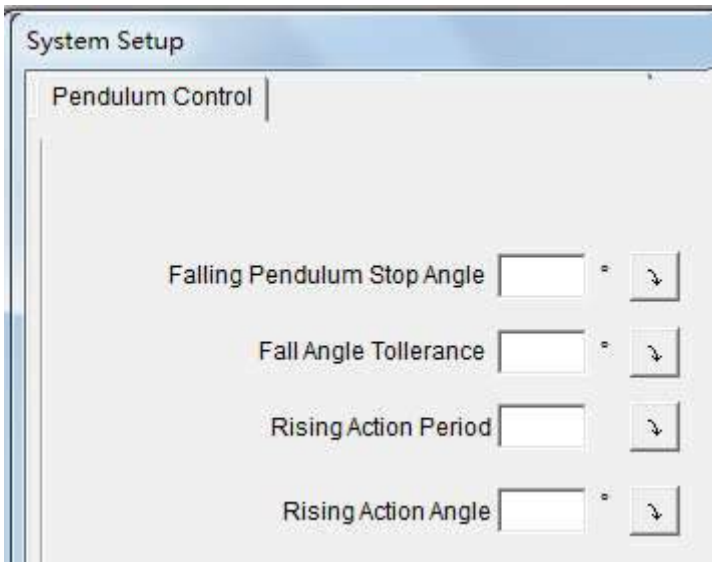
1

Delete Batch | Open Batch | Cancel

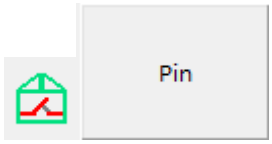
Number	Toughness	Energy	Standard	TestDate	Operator	Material	Temperature	Comment	Style	Deep	Area	Length	Width	Height	Item 0	Item 1	Size
a-001-b	0	0	ISO147		xyz	Iron	25	Good	V	2.01	60.9	55	10	8.1	1234	1234123	10x10x55
a-002-b	1.12	89.84	DIN	2011-1-16	xyz	Iron	25	Good	V	2	80	55	10	8			10x10x55
a-003-b	1.77	141.40	DIN	2011-1-16	xyz	Iron	25	Good	V	2	80	55	10	8			10x10x55
a-004-b	0.89	71.22	DIN	2011-1-16	xyz	Iron	25	Good	V	2	80	55	10	8			10x10x55
a-005-b	0	0	DIN		xyz	Iron	25	Good	V	2	80	55	10	8			10x10x55

9. Support hand control box and software at the same time.

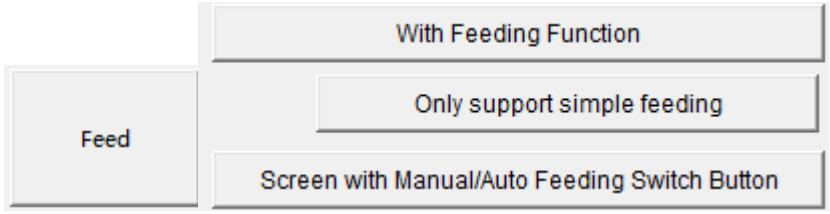
10. Automatic control of pendulum: the software controls the rise and fall of pendulum and the pendulum returns to initial position after each test.



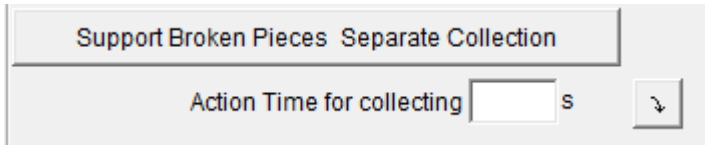
11. Pin control: the software controls the pin position and show pin condition in real time.



12. Automatic specimen feeding control: with automatic specimen feeding device, the software can feed specimen automatically.

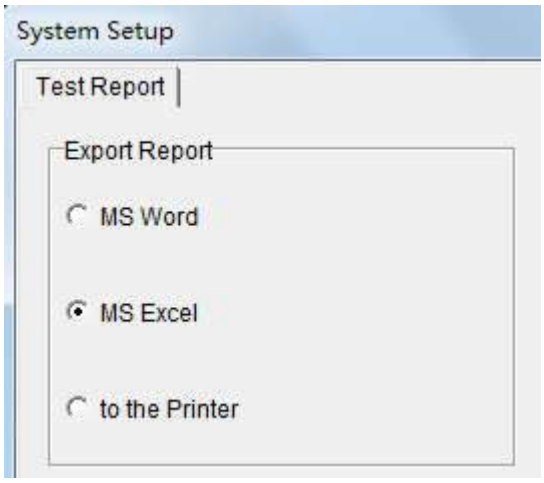


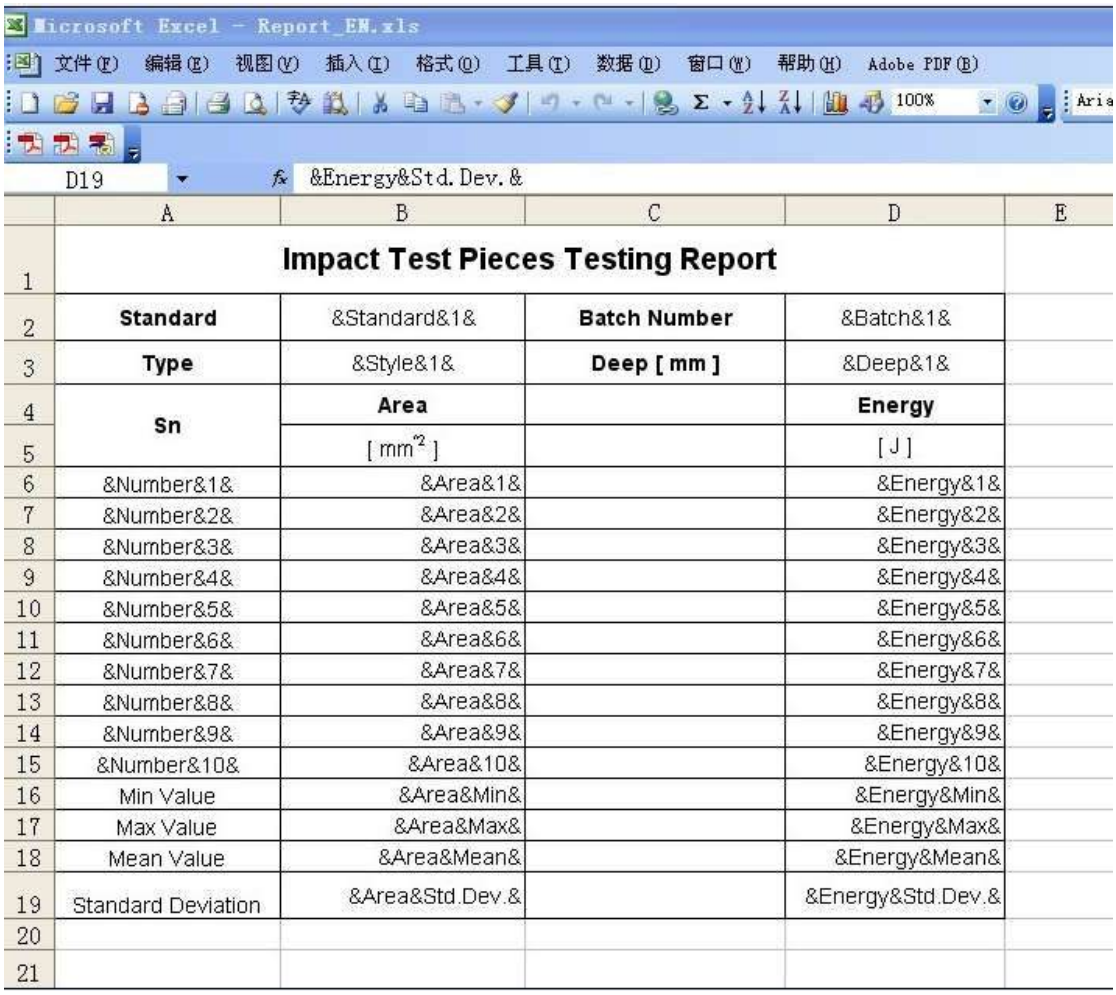
13. Tested specimen recycle: with tested specimen recycling device, the software can collect the specimen after test automatically.



14. Close-door impact function: after activated and the specimen is installed, it tests and jumps to new specimen information automatically as soon as the door of safety shield is closed, which greatly rise test efficiency.

15. Test report supports Word, Excel and other formats in the software.



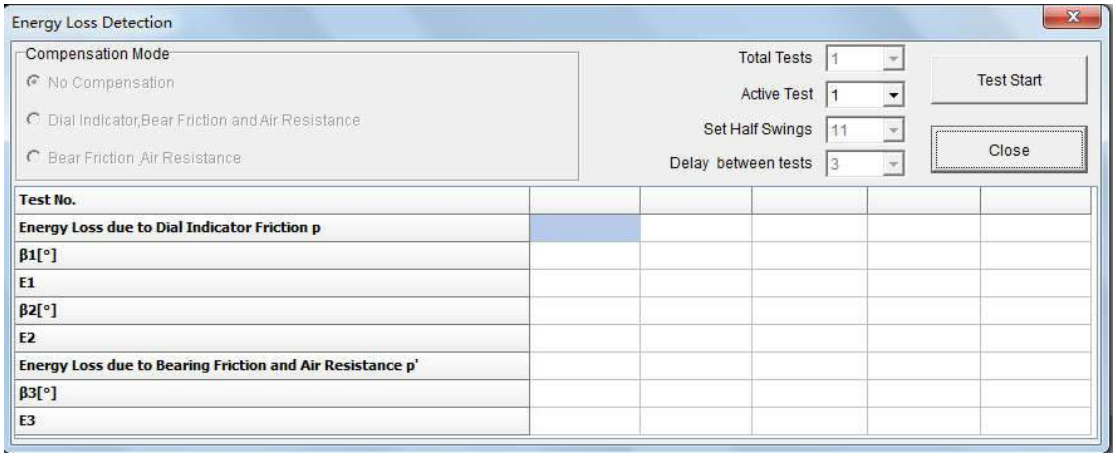

Microsoft Excel - Report_EN.xls

文件(F) 编辑(E) 视图(V) 插入(I) 格式(O) 工具(T) 数据(D) 窗口(W) 帮助(H) Adobe PDF(B)

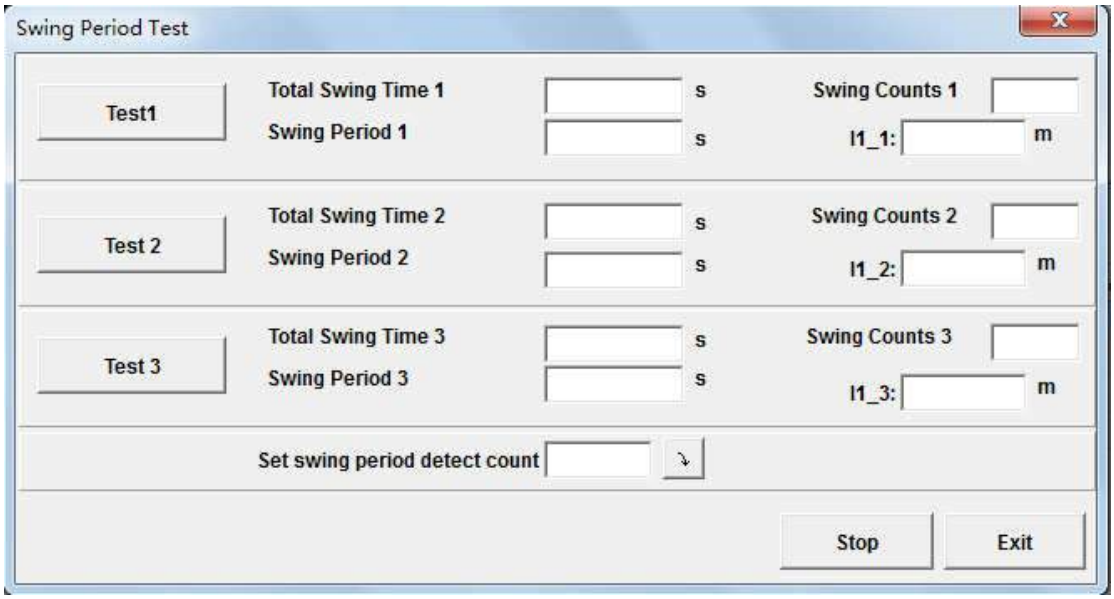
D19 fx &Energy&Std.Dev.&

	A	B	C	D	E
1	**Impact Test Pieces Testing Report**				
2	**Standard**	&Standard&1&	**Batch Number**	&Batch&1&	
3	**Type**	&Style&1&	**Deep [mm]**	&Deep&1&	
4	**Sn**	**Area**		**Energy**	
5		[mm^2]		[J]	
6	&Number&1&	&Area&1&		&Energy&1&	
7	&Number&2&	&Area&2&		&Energy&2&	
8	&Number&3&	&Area&3&		&Energy&3&	
9	&Number&4&	&Area&4&		&Energy&4&	
10	&Number&5&	&Area&5&		&Energy&5&	
11	&Number&6&	&Area&6&		&Energy&6&	
12	&Number&7&	&Area&7&		&Energy&7&	
13	&Number&8&	&Area&8&		&Energy&8&	
14	&Number&9&	&Area&9&		&Energy&9&	
15	&Number&10&	&Area&10&		&Energy&10&	
16	Min Value	&Area&Min&		&Energy&Min&	
17	Max Value	&Area&Max&		&Energy&Max&	
18	Mean Value	&Area&Mean&		&Energy&Mean&	
19	Standard Deviation	&Area&Std.Dev.&		&Energy&Std.Dev.&	
20					
21					

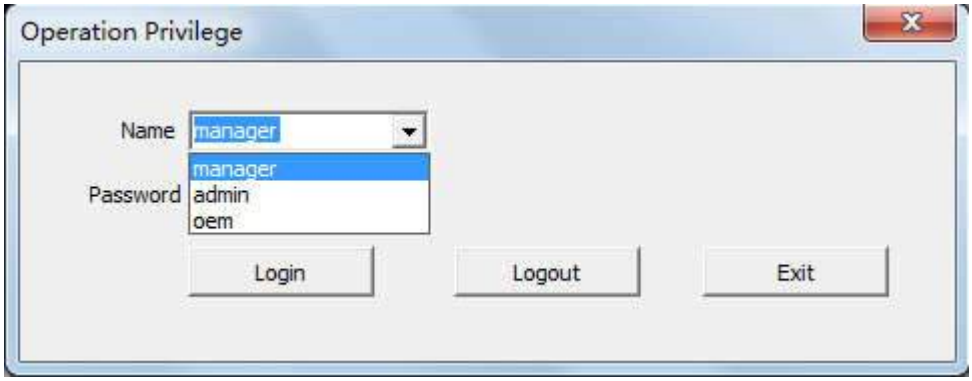
16. Automatic energy compensation test function: include windage and friction of indicator and ball bearing test. The test results are more accurate after energy compensation.



17. Automatic calculation of pendulum length according to swing period.



18. Password protection of users authority: passwords are different for users of different grades.

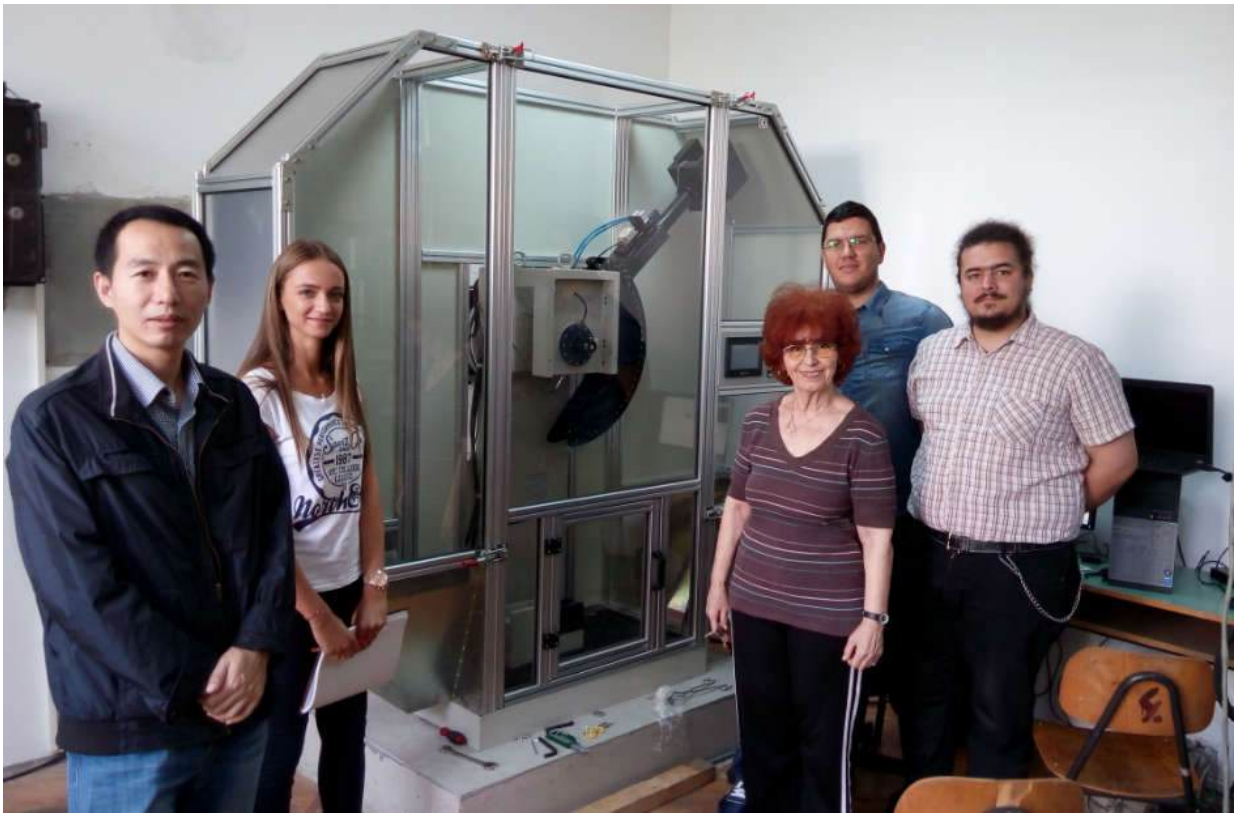


19. Multi-language function: currently, the software has versions like English, Russian, Italian, Spanish, Portuguese, Chinese etc., and other languages can be added upon request.

Few cases for reference:

Customer: Rosatom State Atomic Energy Corporation, Russia

Products: JWT-406DI Pendulum Impact Tester with Instrumented System, NIST verification



Customer: University of Novi Sad, Serbia

Product: JWT-450I Pendulum Impact Tester with Instrumented System, NIST verification

Customer: Addis Ababa Science and Technology University, Ethiopia

Product: Two sets of JWT-450 Pendulum Impact Tester

Customer: Indian Institute of Technology

Product: JWT-450 Pendulum Impact Tester