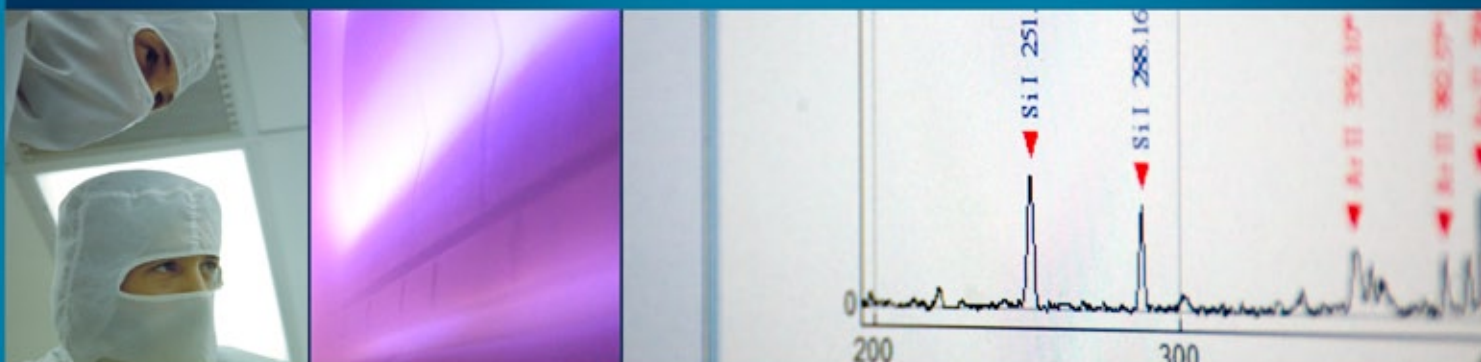


SPECLINE

SPECTRAL LINE IDENTIFICATION FOR ATOMS AND MOLECULES



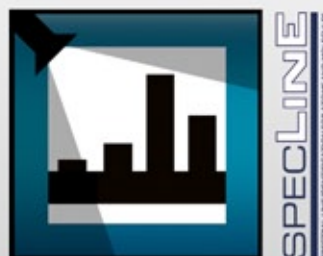
PLASUS SPECLINE FEATURES:

- EXTENSIVE DATABASE FOR ATOMS, IONS AND MOLECULES
- IDENTIFICATION AND EVALUATION OF SPECTRAL DATA
- DIRECT DATA IMPORT OF COMMON SPECTROSCOPIC FILE FORMATS

peak finding +++

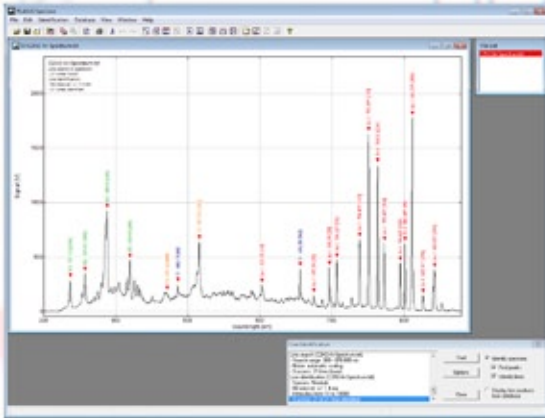
line identification +++

atoms and molecules +++



Powerful software tool for analyzing spectral data.
Designed and developed by PLASUS.

PLASUS SpecLine is the most powerful software tool for evaluating your spectral data. The unique database for atoms and molecules makes line identification fast and easy. Many evaluation functions will support you in analyzing and comparing your spectra. All common spectroscopic file formats are supported.



Line identification

Identification of atoms, molecules and their ions using the included database.

Automatic peak finding

Search algorithms for peak finding in the spectra.

Comparison of measured data

Several spectra - even with different file formats - can be overlaid and compared.

Data evaluation

Data smoothing, integral, scaling, peak value calibration, arithmetic of spectra (+, -, *, /).

Selection for database search

Periodic table for atoms, molecule list box, neutrals, ions, wavelength and intensity range.

Database versions

A: atoms and ions

AM: atoms, ions and most of two-atomic molecules

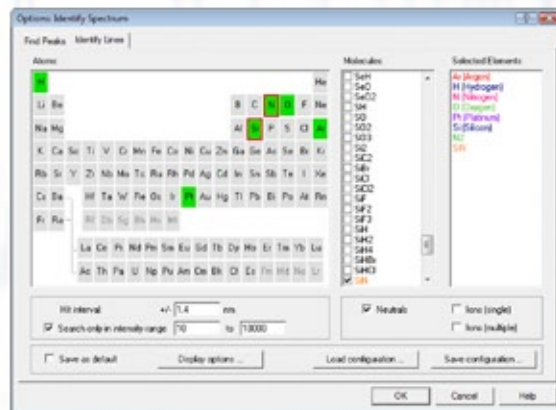
AMS: all available atoms, molecules and ions

Configuration files

Saving and loading of search parameters.

SpecLine file format

File format containing spectrum as well as line identification data.



Line [nm]	Element	I [rel.]	Energy [eV] lower - upper	Transition lower - upper	Quantum number lower - upper	Comment
422.075	Ar I	4	11.55 - 14.90	4s ³ P ^o 2 - 5p ³ P ^o 2	2 - 3	
423.100	Ar I	1	11.55 - 14.90	4s ³ P ^o 2 - 5p ³ P ^o 2	2 - 1	
423.802	Ar I	4	11.62 - 14.74	4s ³ P ^o 2 - 5p ³ P ^o 2	1 - 0	
425.827	Ar I	2	11.62 - 14.50	4s ³ P ^o 2 - 5p ³ P ^o 2	1 - 2	
427.219	Ar I	3	11.62 - 14.52	4s ³ P ^o 2 - 5p ³ P ^o 2	1 - 1	
430.270	Ar I	2	11.62 - 14.51	4s ³ P ^o 2 - 5p ³ P ^o 2	1 - 2	
433.200	Ar I	3	11.62 - 14.89	4s ³ P ^o 2 - 5p ³ P ^o 2	1 - 2	
433.830	Ar I	2	11.62 - 14.89	4s ³ P ^o 2 - 5p ³ P ^o 2	1 - 1	
434.160	Ar I	1	11.62 - 14.89	4s ³ P ^o 2 - 5p ³ P ^o 2	1 - 1	
434.040	H	10	10.20 - 10.20	2p ³ P ^o 1 - 3d ³ D ^o 1	1n - 11n	
431.420	Cl I	1000	0.00 - 2.67	3p ² - 4p ²	0 - 0	Q-Head
432.400	Cl I	600	0.00 - 2.67	3p ² - 4p ²	0 - 2	Q-Head
422.200	Ne	600	7.39 - 11.20	2P ^{3/2} - 3P ^{3/2}	6 - 2	2. Pos. System
424.870	Ne	500	7.39 - 11.20	2P ^{3/2} - 3P ^{3/2}	5 - 1	2. Pos. System
431.800	Ne	200	0.00 - 8.22	3P ^{3/2} - 4P ^{3/2}	12 - 1	Vogel-Kaplan-Sanku
434.300	Ne	400	7.39 - 11.20	2P ^{3/2} - 3P ^{3/2}	4 - 0	2. Pos. System

Database information

Wavelength, oscillator strength, designation, transition probabilities, energies and quantum number of upper and lower level.

Data import

Data import formats: ASCII, Binary, EMICON, GRAMS, Ocean Optics, 4SPEC, MAPS, DaVis, WinSpec, AvaSoft, Hamamatsu and more.

Data export

Data export to ASCII, Binary and Excel(CSV) format, graphic export to BMP, WMF and WPG format.

More information and a free trial version are available on our website: www.plasus.de.

P L A S U S

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P L A S U S

Spectroscopic plasma monitor and
process control systems

April 2018



PLASUS SpecLine

Version 2.1

Content of Database for Version:

SpecLine A

SpecLine AM

SpecLine AMS

Molecules in PLASUS SpecLine AM and AMS:

Element	Molecules
Silver molecules	Ag ₂ , AgCl, AgF, AgH, AgO
Aluminum molecules	Al ₂ , AlCl, AlF, AlH, AlH ⁺ , AlN, AlO, AlS
Arsenic molecules	As ₂ , AsCl, AsF, AsH, AsN, AsO, AsO ⁺ , AsP, AsS, AsS ⁺
Gold molecules	Au ₂ , AuCl, AuH
Boron molecules	B ₂ , BCl, BF, BH, BH ⁺ , BN, BO, BO ⁺ , BS
Barium molecules	BaCl, BaF, BaH, BaO, BaS
Beryllium molecules	BeCl, BeF, BeH, BeH ⁺ , BeO, BeS
Carbon molecules	C ₂ , C ₂ ⁺ , C ₂ ⁻ , C ₃ , CCl, CF, CF ₂ , CH, CH ⁺ , CH ₂ , CH ₃ , CN, CN ⁺ , CN ₂ , C ₂ N, C ₂ N ₂ , CO, CO ⁺ , CO ₂ , CO ₂ ⁺ , CP, CS, CS ₂ , CS ₂ ⁺
Calcium molecules	CaCl, CaF, CaH, CaO, CaS
Cadmium molecules	CdCl, CdF, CdH, CdH ⁺
Chlorine molecules	Cl ₂ , Cl ₂ ⁺ , ClF, ClO
Chromium molecules	CrCl, CrF, CrH, CrO, CrS
Copper molecules	Cu ₂ , CuCl, CuF, CuH, CuO, CuS
Fluorine molecules	F ₂ , F ₂ ⁺
Iron molecules	FeCl, FeF, FeO
Gallium molecules	Ga ₂ , GaCl, GaF, GaH, GaO
Germanium molecules	GeCl, GeF, GeH, GeO, GeS
Hydrogen molecules	HCN, HCl, HCl ⁺ , HF, HF ⁺ , H ₂ O, H ₂ O ⁺
Helium molecules	He ₂ , HeNe
Mercury molecules	Hg ₂ , Hg ₂ ⁺ , HgCl, HgF, HgH, HgH ⁺
Indium molecules	In ₂ , InCl, InF, InH, InO, InO ⁺
Potassium molecules	K ₂
Lithium molecules	Li ₂ , LiCl, LiH
Magnesium molecules	Mg ₂ , MgCl, MgF, MgH, MgH ⁺ , MgO, MgS
Nitrogen molecules	N ₂ , N ₂ ⁺ , NCl, NF, NH, NH ⁺ , NH ₂ , NO, NO ₂ , N ₂ O, N ₂ O ⁺ , NS, NS ⁺
Sodium molecules	Na ₂ , NaF, NaH, NaK
Neon molecules	Ne ₂
Nickel molecules	NiCl, NiF, NiH, NiO
Oxygen molecules	O ₂ , O ₂ ⁺ , O ₃ , OH, OH ⁺
Phosphorus molecules	P ₂ , P ₂ ⁺ , PCl, PF, PF ⁺ , PH, PH ⁺ , PN, PO, PO ⁺ , PS, PS ⁺
Platinum molecules	PtC, PtH, PtO
Sulfur molecules	S ₂ , SF, SH, SH ⁺ , SO, SO ₂ , S ₂ O
Selenic molecules	Se ₂ , SeCl, SeH, SeO, SeS
Silicon molecules	Si ₂ , SiC ₂ , SiCl, SiF, SiH, SiH ⁺ , SiH ₂ , SiN, SiO, SiO ⁺ , SiO ₂ , SiS
Tin molecules	SnCl, SnF, SnH, SnO, SnS
Strontium molecules	SrCl, SrF, SrH, SrO
Tantalum molecules	TaO, TaO ⁺
Titanium molecules	TiCl, TiF, TiH, TiN, TiO, TiS
Vanadium molecules	VCl, VH, VO
Tungsten molecules	WO
Zinc molecules	Zn ₂ , ZnCl, ZnF, ZnH, ZnH ⁺ , ZnO

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Additional molecules in PLASUS SpecLine AMS:

Element	Molecules
Silver molecules	AgBr
Aluminum molecules	AlBr
Arsenic molecules	AsH ₂
Boron molecules	BBr, BO ₂ , BOF ₂
Bromine molecules ecules	Br ₂ , Br ₂ ⁺ , BrCl, BrF, BrO
Carbon molecules	CBr, CHCl, CHF, CHNO, CHNS, CHO, CHOCHO, CHOF, CHOOH, CH ₂ O, CH ₂ CHCHO, CH ₃ Br, CH ₃ Cl, CH ₃ NO ₂ , CH ₃ O, C ₂ H ₂ , C ₂ H ₄ , C ₂ H ₄ O, C ₂ H ₅ , C ₂ H ₅ CHO, C ₂ H ₅ NO ₂ , C ₃ H ₃ , C ₃ H ₅ , C ₃ H ₆ O, C ₄ H ₂ , C ₄ H ₂ ⁺ , C ₅ H ₅ , C ₆ H ₅ , C ₆ H ₅ Cl, C ₆ H ₅ F, C ₆ H ₅ CHO, C ₆ H ₅ OH, C ₆ H ₆ , C ₇ H ₇ , C ₁₀ H ₈ , CF ₃ NO, C ₃ F ₇ NO ₂ , C ₃ F ₇ NO, CF ₃ NO ₂ , COCl ₂ , C ₂ O, C ₃ O ₂ , COS, COS ⁺ , C ₃ S ₂
Calcium molecules	CaBr, CaOH
Cadmium molecules	CdBr
Cerium molecules	CeO
Chlorine molecules	ClF ₃ , ClO ₂
Chromium molecules	CrBr
Copper molecules	CuBr, CuOH
Fluorine molecules	FCO, F ₂ CO
Iron molecules	FeBr
Gallium molecules	GaBr
Germanium molecules	GeBr
Hydrogen molecules	H ₂ , HBr, HBr ⁺ , HCP, HNF, HNO, HNO ₂ , HS ₂ , H ₂ S, H ₂ S ⁺
Mercury molecules	HgBr, HgBr ₂ , HgCl ₂
Indium molecules	InBr, InBr ₂ , InCl ₂
Lithium molecules	LiBr
Magnesium molecules	MgBr, MgOH
Nitrogen molecules	N ₃ , NCO, NCS, NCl ₂ , NF ₂ , NH ₃ , N ₂ H ₂ , N ₂ H ₄ , NO ₃ , N ₂ O ₃ , N ₂ O ₄ , N ₂ O ₅ , NSF
Nickel molecules	NiBr
Phosphorus molecules	PH ₂ PH ₃ , PHO, POBr, POBr ₂ , POCl, POCl ₂
Sulfur molecules	S ₃ , S ₄ , SO ₃
Selenic molecules	SeBr, SeBr ₂ , SeCl ₂ , SeO ₂
Silicon molecules	SiBr, SiBr ⁺ , SiHBr, SiCl ₂ , SiHCl, SiF ₂ , SiF ₃ , SiH
Tin molecules	SnBr
Strontium molecules	SrBr, SrOH
Titanium molecules	TiBr
Zinc molecules	ZnBr

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