



Radioactivity - Radionuclides - Radiation
8th Nuclear Science Training Course with Nuclides.net
(Institut Jožef Stefan, Ljubljana, Slovenia, 13th-15th September 2006)

Wednesday, 13th September 2006

**Case Study: Nuclear charts, nuclear data, searchable
databases**

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Nuclear Charts

- Nuclear charts contains information about basic nuclear properties of known nuclides
- Decay processes and nuclear reactions can be retrieved in a easy graphical way
- Several paper based charts exit worldwide



Nuclides.net presents the Nuclide Explorer



Datasheets in Nuclides.net

Print

FactSheets

Notes

Averaged Cross sections

Mass Excess

-31157 (± 4) keV

Mass

195.96655150 (± 429) u

Half-life

6.183 (± 10) d

Abundance

-

Spin

2

Parity

-

Binding Energy

7.915 MeV

Type of decay

β-

β+

Branching ratio

6.95E-02

9.31E-01

Decay Energy, Q(MeV)

0.68

1.49

Daughters

80 Hg 196

78 Pt 196

Mean Decay Energies

Alpha(MeV)

0

Electron(keV)

32.5

Photon(keV)

475

Gamma

Beta -

Beta +/EC

e-

X

Joint Research Centre



Characteristic gamma lines from ^{196}Au decay

nuclides.net **^{196}Au** DataSheet


Print sections

Gamma Rays ^{196}Au Graph

Number of spectra: 14 $\Sigma E.P(\text{eV per disintegration})$: 4.2080E+05

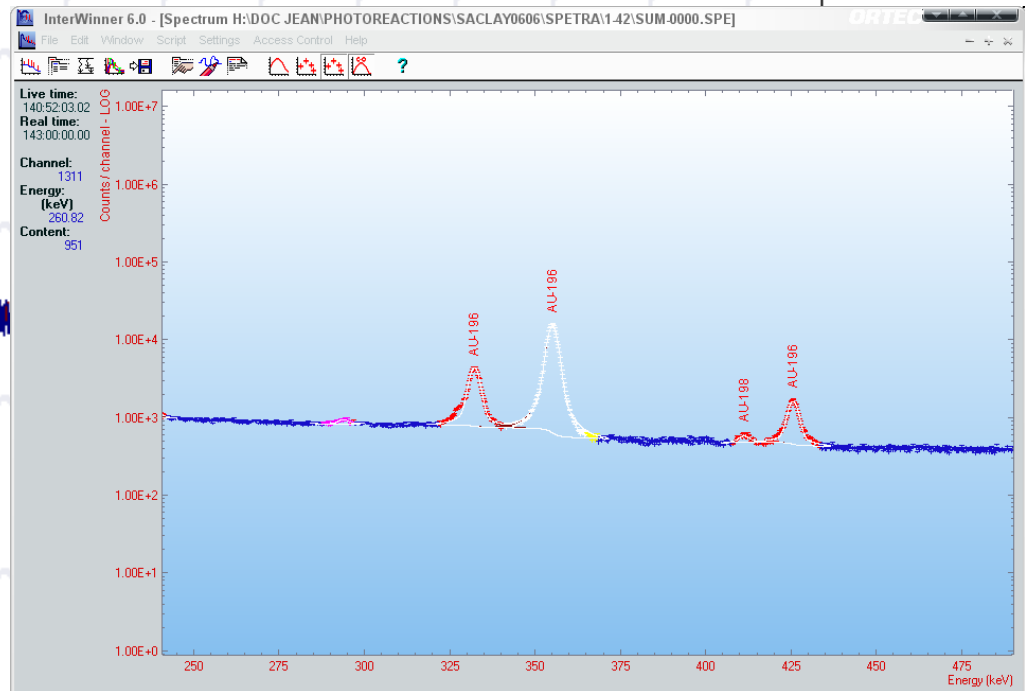
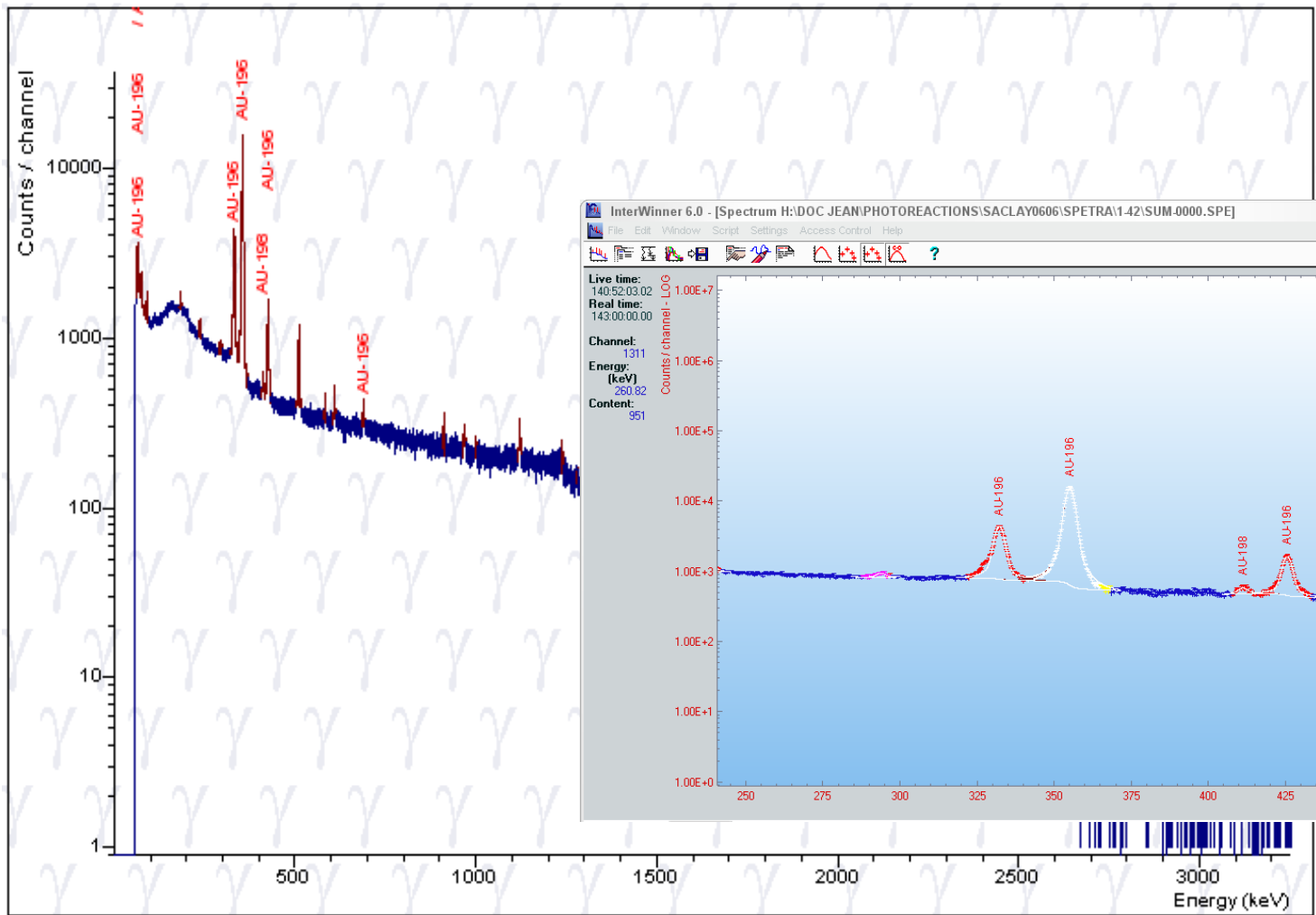
Energy(eV)	Emission probability
355730	8.7000E-01
333030	2.2900E-01
426100	7.2000E-02
521400	3.6900E-03
1091400	1.4900E-03
326200	5.0000E-04
759100	4.4300E-04
393400	1.0100E-04
570800	6.9000E-05
432000	6.7000E-05
688800	6.1000E-05
659500	3.7000E-05
673500	2.7000E-05
1005700	2.7000E-05

Gamma Beta - Beta + /EC e- X





Measurement of γ -spectrum



Print

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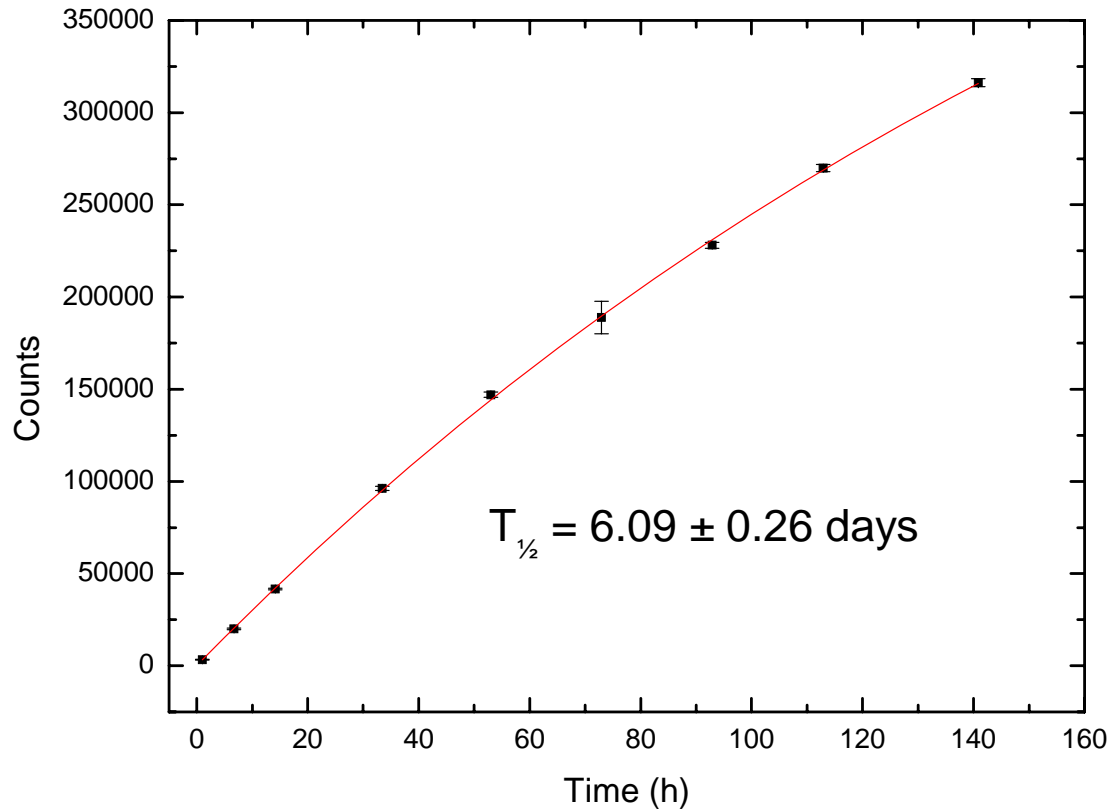
Beta +/EC

e-

X

Joint Research Centre

Half-life determination



Half-life
6.183 (± 10) d



Factsheets



Factsheets

Nuclide : ¹⁹⁶ Au

Half-Life = 6.18E+00 d
Average or mean lifetime = 8.9E+00 d
Specific Activity = 3.99E+15 Bq/g

Heat Generation:

Isotopic Power(α) = 0.0E+00 W/g
Isotopic Power($\alpha+\beta$) = 2.07E+01 W/g
Isotopic Power($\alpha+\beta+\gamma$) = 3.24E+02 W/g

Gamma Emission:

Specific Gamma Dose Rate at 1m. = 1.42E-01 μ Sv/MBq.h

Packaging & Transport:

Activity limits for special form materials, A1 = 2 TBq
Activity limits for normal form materials, A2 = 2 TBq

Mass(A1) = 5.02E-16 g
Mass(A2) = 5.02E-16 g





Nucleonica Preview

