Fe(μ^-,xnγ)   **2006Me08,1973Ev02**

		History	
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Huo Junde	NDS 110,2689 (2009)	31-Mar-2007

1973Ev02: Fe(μ^-,xnγ), natural target, an average of 8000 muon stops per sec in targets, measured: γ, Ge(Li) detectors.

2006Me08: ^{56}Fe(μ^-,ν3nγ), The μ^- beam obtained from decay of π^- beam at 90 MeV/c. Measured Iγ, $\gamma\gamma$, γ-p using two HPGe detectors at TRIUMF facility.

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      Muonic Lyman series for natural Iron

   μ x ray        Energy        Intensity in percent

    2p-1s        1253.06  6    a    74.5  15
    3p-1s        1522.3   3         7.5   4
    4p-1s        1615.3   3         2.7   2
    5p-1s        1658.2   3         1.6   2
    6p-1s        1681.7   3         2.2   2
    7p-1s        1695.7   3         2.0   2
    8p-1s        1704.7   3         1.2   2
  (9-∞)p-1s      1708-1733          8.4   10

a: Taken by 2006Me08 from 1976Ha24, used as
   calibration standard.
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      Muonic Balmer series for natural Iron

   μ x ray        Energy        Intensity in percent

    3d-2p        265.3   3          28.8
    3d-2p        268.9   3          16.6
    4d-2p        358.0   3          5.4
    4d-2p        362.0   3          3.1
    5d-2p        400.6   3          5.9
    5d-2p        404.6   3
    6d-2p        423.8   3          3.4
    6d-2p        427.8   3
    7d-2p        437.8   3          3.5
    7d-2p        442.5   3
    8d-2p        447.3   3          1.5
    8d-2p        451.5   3
  (9-∞)d-2p      455-475            5.9
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<u>^{53}Mn Levels</u>

E(level)[†]	J$^{\pi}$[†]	Comments
0.0	7/2$^-$	
377.86	5/2$^-$	
1289.71	3/2$^-$	
2706.76	1/2$^+$	J$^{\pi}$: 1/2$^-$ listed by 2006Me08, but 1/2$^+$ for ^{53}Mn Adopted Levels.

[†] From ^{53}Mn Adopted Levels.

Fe(μ^-,xnγ)   **2006Me08,1973Ev02 (continued)**

γ(^{53}Mn)

E_γ[†]	I_γ[‡]	E_i(level)	J_i^π	E_f	J_f^π	Comments
377.5 2	1.6 5	377.86	5/2$^-$	0.0	7/2$^-$	E_γ,I_γ: from 1973Ev02. I_γ: Iγ per 100 captured μ^- (in natural Fe target).
1289.8		1289.71	3/2$^-$	0.0	7/2$^-$	
1416.8	0.2 2	2706.76	1/2$^+$	1289.71	3/2$^-$	

[†] 2006Me08 list values from ^{53}Mn adopted gammas, except As noted.
[‡] γ-ray yield.

Fe(μ^-,xnγ)   **2006Me08,1973Ev02**

Level Scheme

Intensities: Relative I$_\gamma$

Legend

I$_\gamma$ < 2%×I$_\gamma^{max}$
I$_\gamma$ < 10%×I$_\gamma^{max}$
I$_\gamma$ > 10%×I$_\gamma^{max}$

$^{53}_{25}$Mn$_{28}$