

Visit the [Isotope Explorer](#) home page!

**52 reference(s) found :**

**Keynumber:** 2001HAZT

**Reference:** INDC(CPR)-053/L, p.23 (2001)

**Authors:** Y.Han

**Title:** Calculation and Recommendation of  $n + {}^{174,176-180}\text{NatHf}$  Reactions

**Keyword abstract:** NUCLEAR REACTIONS  $\text{Hf}, {}^{174}, {}^{176}, {}^{177}, {}^{178}, {}^{179}, {}^{180}\text{Hf}(n,n), (n,n'), (n,\gamma), (n,2n), (n,p), E < 20 \text{ MeV};$  calculated  $\sigma$ . Comparisons with data.

**Keynumber:** 2000WAZW

**Reference:** INDC(CPR)-052/L, p.103 (2000)

**Authors:** T.Wang, T.Liu, J.Liu

**Title:** The Experimental Data Evaluation for Natural Hf and Its Isotopes

**Keyword abstract:** NUCLEAR REACTIONS  ${}^{176}, {}^{177}, {}^{178}, {}^{179}, {}^{180}\text{Hf}(n,\gamma), E < 3 \text{ MeV}; \text{Hf}(n,\gamma), (n,X), E < 20 \text{ MeV};$  compiled,evaluated  $\sigma$ .

**Keynumber:** 2000APZZ

**Reference:** Proc.10th Intern.Symposium on Capture Gamma-Ray Spectroscopy and Related Topics, Santa Fe, New Mexico, 30 August-3 September 1999, S.Wender, Ed., p.51 (2000); AIP Conf.Proc. 529 (2000)

**Authors:** A.Aprahamian, R.C.de Haan, H.Borner, H.Lehmann, M.Jentschel

**Title:** The Nature of  $K^\pi = 0^+$  Excitations in Deformed Nuclei

**Keyword abstract:** NUCLEAR REACTIONS  ${}^{177}\text{Hf}, {}^{155}\text{Gd}(n,\gamma), E=\text{thermal};$  measured  $E\gamma, I\gamma. {}^{178}\text{Hf}, {}^{156}\text{Gd}$  deduced levels  $T_{1/2}, B(E2),$ collective bands. Gamma-ray-induced Doppler broadening technique.

**Keynumber:** 1999SU03

**Reference:** Yad.Fiz. 62, No 1, 24 (1999); Phys.Atomic Nuclei 62, 19 (1999)

**Authors:** A.M.Sukhovoi, V.A.Khitrov

**Title:** Experimental Estimate of the Density of Levels in a Heavy Nucleus That Are Excited in  $(n,\gamma)$  Reactions at Excitation Energies of 3 to 4 MeV

**Keyword abstract:** NUCLEAR REACTIONS  ${}^{113}\text{Cd}, {}^{123}\text{Te}, {}^{145}\text{Nd}, {}^{149}\text{Sm}, {}^{155}, {}^{157}\text{Gd}, {}^{162}, {}^{163}, {}^{164}\text{Dy}, {}^{167}\text{Er}, {}^{173}, {}^{174}\text{Yb}, {}^{177}, {}^{178}, {}^{180}\text{Hf}, {}^{187}, {}^{189}\text{Os}, {}^{195}\text{Pt}, {}^{199}\text{Hg}, {}^{127}\text{I}, {}^{159}\text{Tb}, {}^{165}\text{Ho}, {}^{169}\text{Tm}, {}^{175}\text{Lu}, {}^{181}\text{Ta}, {}^{191}\text{Ir}, {}^{197}\text{Au}, {}^{124}\text{Te}, {}^{182}, {}^{185}\text{W}(n,\gamma), E=\text{thermal};$  analyzed  $I\gamma;$  deduced non-exponential level densities.

**Keynumber:** 1999HO33

**Reference:** Pure Appl.Chem. 71, 2309 (1999)

**Authors:** N.E.Holden

**Title:** Temperature Dependence of the Westcott g-Factor for Neutron Reactions in Activation Analysis (Technical Report)

**Keyword abstract:** NUCLEAR REACTIONS  ${}^{103}\text{Rh}, {}^{113}\text{Cd}, {}^{115}\text{In}, {}^{135}\text{Xe}, {}^{148}\text{Pm}, {}^{149}, {}^{151}\text{Sm}, {}^{151}, {}^{152}, {}^{153}, {}^{154}, {}^{155}\text{Eu}, {}^{155}, {}^{157}\text{Gd}, {}^{164}\text{Dy}, {}^{175}, {}^{176}\text{Lu}, {}^{177}\text{Hf}, {}^{182}\text{Ta}, {}^{185}, {}^{187}\text{Re}, {}^{197}\text{Au}, {}^{231}, {}^{233}\text{Pa}, {}^{235}, {}^{238}\text{U}$   $(n,\gamma), E=\text{low};$  calculated Westcott g-factors vs temperature.

**Keynumber:** 1999BO14

**Reference:** Yad.Fiz. 62, No 5, 892 (1999); Phys.Atomic Nuclei 62, 832 (1999)

**Authors:** S.T.Boneva, E.V.Vasilieva, L.I.Simonova, V.A.Bondarenko, A.M.Sukhovoi, V.A.Khitrov

**Title:** (n, $\gamma$ ) Reactions in Heavy Nuclei: Manifestations of nuclear structure at excitation energies up to the neutron binding energy

**Keyword abstract:** NUCLEAR REACTIONS  $^{113}\text{Cd}$ ,  $^{123}$ ,  $^{124}\text{Te}$ ,  $^{127}\text{I}$ ,  $^{134}$ ,  $^{136}$ ,  $^{137}$ ,  $^{138}\text{Ba}$ ,  $^{139}\text{La}$ ,  $^{142}$ ,  $^{143}$ ,  $^{145}\text{Nd}$ ,  $^{149}\text{Sm}$ ,  $^{155}$ ,  $^{157}\text{Gd}$ ,  $^{159}\text{Tb}$ ,  $^{162}$ ,  $^{163}$ ,  $^{164}\text{Dy}$ ,  $^{165}\text{Ho}$ ,  $^{167}\text{Er}$ ,  $^{169}\text{Tm}$ ,  $^{173}$ ,  $^{174}$ ,  $^{176}\text{Yb}$ ,  $^{175}$ ,  $^{176}\text{Lu}$ ,  $^{177}$ ,  $^{178}$ ,  $^{179}$ ,  $^{180}\text{Hf}$ ,  $^{181}\text{Ta}$ ,  $^{182}$ ,  $^{186}\text{W}$ ,  $^{187}$ ,  $^{189}\text{Os}$ ,  $^{191}\text{Ir}$ ,  $^{195}\text{Pt}$ ,  $^{197}\text{Au}$ ,  $^{199}\text{Hg}$ (n, $\gamma$ ),E not given; analyzed two-photon  $\gamma$  cascade data; deduced structure effects.

-----  
**Keynumber:** 1999AP02

**Reference:** J.Phys.(London) G25, 685 (1999)

**Authors:** A.Aprahamian, R.C.de Haan, S.R.Lesher, J.Doring, A.M.Bruce, H.G.Borner, M.Jentschel, H.Lehmann

**Title:** Collective  $K^\pi = 0^+$  Vibrational Excitations in  $^{178}\text{Hf}$

**Keyword abstract:** NUCLEAR REACTIONS  $^{177}\text{Hf}$ (n, $\gamma$ ),E=thermal; measured  $E_\gamma$ , $I_\gamma$ .  $^{178}\text{Hf}$  deduced levels  $T_{1/2}$ , $B(E2)$ ,collective effects. Gamma-ray induced Doppler broadening technique.

-----  
**Keynumber:** 1997SU29

**Reference:** Bull.Rus.Acad.Sci.Phys. 61, 1611 (1997)

**Authors:** A.M.Sukhovi, V.A.Khitrov

**Title:** Cascade Gamma Decay of the Compound State of Heavy Nucleus as Seen Experimentally

**Keyword abstract:** NUCLEAR REACTIONS  $^{113}\text{Cd}$ ,  $^{127}\text{I}$ ,  $^{123}\text{Te}$ ,  $^{134}$ ,  $^{136}$ ,  $^{137}$ ,  $^{138}\text{Ba}$ ,  $^{142}$ ,  $^{143}$ ,  $^{145}\text{Nd}$ ,  $^{149}\text{Sm}$ ,  $^{155}$ ,  $^{157}\text{Gd}$ ,  $^{159}\text{Tb}$ ,  $^{165}\text{Ho}$ ,  $^{162}$ ,  $^{163}$ ,  $^{164}\text{Dy}$ ,  $^{167}\text{Er}$ ,  $^{169}\text{Tm}$ ,  $^{173}$ ,  $^{174}$ ,  $^{176}\text{Yb}$ ,  $^{175}$ ,  $^{176}\text{Lu}$ ,  $^{177}$ ,  $^{178}$ ,  $^{179}$ ,  $^{180}\text{Hf}$ ,  $^{195}\text{Pt}$ ,  $^{199}\text{Hg}$ ,  $^{181}\text{Ta}$ ,  $^{182}$ ,  $^{186}\text{W}$ ,  $^{191}\text{Ir}$ ,  $^{197}\text{Au}$ (n, $\gamma$ ),E=thermal; analyzed  $\gamma$  spectra, $\gamma\gamma$ -coin.  $^{114}\text{Cd}$ ,  $^{124}\text{Te}$ ,  $^{137}$ ,  $^{138}$ ,  $^{139}\text{Ba}$ ,  $^{146}\text{Nd}$ ,  $^{150}\text{Sm}$ ,  $^{156}$ ,  $^{158}\text{Gd}$ ,  $^{160}\text{Tb}$ ,  $^{164}\text{Dy}$ ,  $^{168}\text{Er}$ ,  $^{170}\text{Tm}$ ,  $^{174}\text{Yb}$ ,  $^{181}\text{Hf}$ ,  $^{196}\text{Pt}$ ,  $^{200}\text{Hg}$ ,  $^{182}\text{Ta}$ ,  $^{183}\text{W}$ ,  $^{192}\text{Ir}$ ,  $^{198}\text{Au}$  deduced two-quantum cascade intensities vs excitation energy,level density parameters,pairing features.

-----  
**Keynumber:** 1996GEZZ

**Reference:** JINR-E3-96-9 (1996)

**Authors:** G.P.Georgiev, N.G.Panaiotova, Yu.V.Grigorev

**Title:** Neutron Resonance Parameters of  $^{177}\text{Hf}$

**Keyword abstract:** NUCLEAR REACTIONS  $^{177}\text{Hf}$ (n, $\gamma$ ),E=20-700 eV; measured capture  $\gamma$ -ray multiplicity.  $^{178}\text{Hf}$  deduced resonances,J,s-wave neutron strength functions. Tof,16-section NaI(Tl) detector.

-----  
**Keynumber:** [1993RE06](#)

**Reference:** Phys.Rev. C47, 2621 (1993)

**Authors:** J.Rekstad, T.S.Tveter, M.Guttormsen, L.Bergholt

**Title:** K Dependence in the Gamma Decay of Neutron Resonances in  $^{168}\text{Er}$  and  $^{178}\text{Hf}$

**Keyword abstract:** NUCLEAR REACTIONS  $^{167}\text{Er}$ ,  $^{177}\text{Hf}$ (n, $\gamma$ ),E not given; analyzed  $\gamma$ -decay data following neutron capture.  $^{178}\text{Hf}$ ,  $^{168}\text{Er}$  deduced levels, $I_\gamma$ , $J$ , $\pi$ ,K. Transition rate K-selection rule dependence discussed.

-----  
**Keynumber:** 1988BOZO

**Reference:** Program and Theses, Proc.38th Ann.Conf.Nucl.Spectrosc.Struct.At.Nuclei, Baku, p.121 (1988)

**Authors:** S.T.Boneva, E.V.Vasileva, E.P.Grigorev, Yu.P.Popov, A.M.Sukhovi, V.A.Khitrov

**Title:** Possibility of Identification of Low-Energy Primary Gamma-Transitions

**Keyword abstract:** NUCLEAR REACTIONS  $^{177}\text{Hf}(n,\gamma)$ ,E=thermal; measured  $E\gamma,\gamma\gamma$ -coin.  $^{178}\text{Hf}$  deduced levels. Amplitude summation method.

-----  
**Keynumber:** 1988BOZL

**Reference:** JINR-P6-88-117 (1988)

**Authors:** S.T.Boneva, E.V.Vasileva, E.P.Grigorev, Yu.P.Popov, A.M.Sukhovi, V.A.Khitrov

**Title:** The Possibility of Revealing Soft Primary Transitions in  $(n,2\gamma)$  Reaction

**Keyword abstract:** NUCLEAR REACTIONS  $^{177}\text{Hf}(n,\gamma)$ ,E=thermal; analyzed  $\gamma\gamma$ -coin, $E\gamma,I\gamma,\gamma$ -multipolarity.  $^{178}\text{Hf}$  deduced levels, $J,\pi$ . Amplitude summation method.

-----  
**Keynumber:** 1987BOZL

**Reference:** Program and Theses, Proc.37th Ann.Conf.Nucl.Spectrosc.Struct.At.Nuclei, Yurmala, p.136 (1987)

**Authors:** A.A.Bogdzal, S.T.Boneva, E.V.Vasileva, O.I.Elizarov, Yu.P.Popov, A.M.Sukhovi, V.A.Khitrov, Yu.S.Yazvitsky

**Title:** A Study of Cascade Gamma-Decay of  $^{178}\text{Hf}$

**Keyword abstract:** NUCLEAR REACTIONS  $^{177}\text{Hf}(n,\gamma)$ ,E=thermal; measured  $E\gamma,I\gamma,\gamma\gamma$ -coin.  $^{178}\text{Hf}$  deduced levels. Sum coincidence technique.

-----  
**Keynumber:** 1987BOZI

**Reference:** JINR-P6-87-73 (1987)

**Authors:** A.A.Bogdzal, S.T.Boneva, E.V.Vasileva, O.I.Elizarov, Yu.P.Popov, A.M.Sukhovi, V.A.Khitrov, Yu.S.Yazvitsky

**Title:** Investigation of  $^{178}\text{Hf}$  Cascade Gamma-Decay

**Keyword abstract:** NUCLEAR REACTIONS  $^{177}\text{Hf}(n,\gamma)$ ,E=thermal; measured  $E\gamma,I\gamma,\gamma\gamma$ -coin.  $^{178}\text{Hf}$  deduced levels, $J,\pi$ . Amplitude summation method, $\text{Ge}(\text{Li})$  detectors.

-----  
**Keynumber:** 1987BOZF

**Reference:** JINR-E3-87-536 (1987)

**Authors:** S.T.Boneva, V.A.Khitrov, Yu.P.Popov, A.M.Sukhovi, E.V.Vasileva, Yu.S.Yazvitsky

**Title:** On the Influence of the Final States Structure on the Intensity of Two-Quanta Cascades

**Keyword abstract:** NUCLEAR REACTIONS  $^{174}\text{Yb}$ ,  $^{167}\text{Er}$ ,  $^{177}$ ,  $^{178}\text{Hf}(n,\gamma)$ ,E=thermal; measured  $\gamma\gamma$ -coin, $I\gamma$ .  $^{175}\text{Yb}$ ,  $^{168}\text{Er}$ ,  $^{178}$ ,  $^{179}\text{Hf}$  deduced two-quanta cascade intensities. Amplitude summation method.

-----  
**Keynumber:** 1987BO53

**Reference:** Izv.Akad.Nauk SSSR, Ser.Fiz. 51, 1923 (1987); Bull.Acad.Sci.USSR, Phys.Ser. 51, No.11, 43 (1987)

**Authors:** S.T.Boneva, E.V.Vasileva, A.M.Sukhovi

**Title:** Reliability of  $\gamma$ -Transition Scheme Determination in the Coincident Pulse Amplitude Summation Method

**Keyword abstract:** NUCLEAR REACTIONS  $^{143}\text{Nd}$ ,  $^{163}\text{Dy}$ ,  $^{177}$ ,  $^{178}\text{Hf}(n,\gamma)$ ,E not given; measured  $\gamma$  sum spectra.  $^{178}$ ,  $^{179}\text{Hf}$  deduced  $\gamma$ -transitions. Coincident pulse amplitude summation method.

-----  
**Keynumber:** 1987BO52

**Reference:** Izv.Akad.Nauk SSSR, Ser.Fiz. 51, 1882 (1987); Bull.Acad.Sci.USSR, Phys.Ser. 51, No.11, 8 (1987)

**Authors:** A.A.Bogdzal, S.T.Boneva, E.V.Vasileva, O.I.Elizarov, Yu.P.Popov, A.M.Sukhovi, V.A.Khitrov, Yu.S.Yazvitsky

**Title:** Investigation of Cascade  $\gamma$ -Transitions in  $^{178}\text{Hf}$

**Keyword abstract:** NUCLEAR REACTIONS  $^{177}\text{Hf}(n,\gamma)$ ,E=thermal; measured  $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin.  $^{178}\text{Hf}$  deduced levels.

-----  
**Keynumber:** 1986HA22

**Reference:** Nucl.Phys. A455, 231 (1986)

**Authors:** A.M.I.Haque, R.F.Casten, I.Forster, A.Gelberg, R.Rascher, R.Richter, P.von Brentano, G.Barreau, H.G.Borner, S.A.Kerr, K.Schreckenbach, D.D.Warner

**Title:** A Study of the Low-Lying States in  $^{178}\text{Hf}$  through the  $(n,\gamma)$  Reaction

**Keyword abstract:** NUCLEAR REACTIONS  $^{177}\text{Hf}(n,\gamma)$ ,E=thermal,resonance; measured  $E\gamma$ , $I\gamma$ , $I(\text{ce})$ .  $^{178}\text{Hf}$  deduced levels, $J,\pi,\gamma$ -branching, $\gamma$ -multipolarity, $\delta$ , $B(\lambda)$ ,band structure,neutron binding energy.

-----  
**Keynumber:** 1984BE34

**Reference:** Phys.Rev. C30, 464 (1984)

**Authors:** H.Beer, G.Walter, R.L.Macklin, P.J.Patchett

**Title:** Neutron Capture Cross Sections and Solar Abundances of  $^{160}$ ,  $^{161}\text{Dy}$ ,  $^{170}$ ,  $^{171}\text{Yb}$ ,  $^{175}$ ,  $^{176}\text{Lu}$ , and  $^{176}$ ,  $^{177}\text{Hf}$  for the s-Process Analysis of the Radionuclide  $^{176}\text{Lu}$

**Keyword abstract:** NUCLEAR REACTIONS  $^{160}$ ,  $^{161}\text{Dy}$ ,  $^{170}$ ,  $^{171}\text{Yb}$ ,  $^{175}$ ,  $^{176}\text{Lu}$ ,  $^{176}$ ,  $^{177}\text{Hf}(n,\gamma)$ , $E \approx 3$ -500 keV; measured  $\sigma(E)$ , $\gamma$  yields; deduced Maxwellian  $\langle \sigma \rangle$  solar abundances,s-process temperature constraints.  $^{176}$ ,  $^{177}\text{Lu}$ ,  $^{177}$ ,  $^{178}\text{Hf}$ ,  $^{161}$ ,  $^{162}\text{Dy}$ ,  $^{171}$ ,  $^{172}\text{Yb}$  deduced resonances,parameters,  $(g\Gamma n\Gamma\gamma/\Gamma)$ ,s-wave strength functions.

-----  
**Keynumber:** 1983YA06

**Reference:** J.Nucl.Sci.Technol.(Tokyo) 20, 722 (1983)

**Authors:** T.Yamamoto

**Title:** Evaluation of Neutron Capture Gamma-Ray Spectra in Hafnium and Tantalum

**Keyword abstract:** NUCLEAR REACTIONS  $^{174}$ ,  $^{176}$ ,  $^{177}$ ,  $^{178}$ ,  $^{179}$ ,  $^{180}\text{Hf}$ ,  $^{181}\text{Ta}(n,\gamma)$ ,E=thermal;  $^{181}\text{Ta}(n,\gamma)$ ,E=0.25,0.5 MeV; calculated capture  $E\gamma$ , $I\gamma$ .  $^{182}\text{Ta}$ ,  $^{175}$ ,  $^{177}$ ,  $^{178}$ ,  $^{179}$ ,  $^{180}$ ,  $^{181}\text{Hf}$  deduced level density parameters. Cascade model.

-----  
**Keynumber:** 1977ST10

**Reference:** Nucl.Phys. A281, 240 (1977)

**Authors:** M.Stefanon, F.Corvi

**Title:** Resonance Neutron Capture Gamma Rays in  $^{177}\text{Hf}$

**Keyword abstract:** NUCLEAR REACTIONS  $^{177}\text{Hf}(n,\gamma)$ ,E=1-165 eV; measured  $E\gamma$ , $I\gamma$ ; deduced Q.  $^{178}\text{Hf}$  deduced levels, $J,\pi$ ,E1,M1 strength. Enriched target,Ge(Li) detector.

-----  
**Keynumber:** 1976SMZM

**Reference:** ANL-76-96, Ann.Rept., p.131 (1976)

**Authors:** R.K.Smith, D.L.Bushnell

**Title:** Nuclear Structure of  $^{178}\text{Hf}$

**Keyword abstract:** NUCLEAR REACTIONS  $^{177}\text{Hf}(n,\gamma)$ ; measured  $\gamma$ -spectra.  $^{178}\text{Hf}$  deduced levels.

-----  
**Keynumber:** 1976RO09

**Reference:** Nucl.Phys. A264, 93 (1976)

**Authors:** G.Rohr, H.Weigmann

**Title:** Short Range Energy Dependence of the Neutron Widths of  $^{177}\text{Hf}$  Resonances

**Keyword abstract:** NUCLEAR REACTIONS  $^{177}\text{Hf}(n,\gamma)$ , self-indication,  $E=10-300$  eV; measured  $\sigma(E, E\gamma)$ .  $^{178}\text{Hf}$  resonances deduced  $\Gamma_n, S$ . Statistical test for intermediate structure.

-----  
**Keynumber:** 1975SMZM

**Reference:** ANL-75-75, Ann.Rept., p.148 (1975)

**Authors:** R.K.Smithers, D.L.Bushnell, D.J.Buss

**Title:** Nuclear Structure of  $^{178}\text{Hf}$  and  $^{180}\text{Hf}$

**Keyword abstract:** NUCLEAR REACTIONS  $^{179}, ^{177}\text{Hf}(n,\gamma)$ ,  $E=\text{thermal}$ ; measured  $\gamma$ -spectra.  $^{178}, ^{180}\text{Hf}$  deduced levels,  $K, J, \pi$ .

-----  
**Keynumber:** 1975LI10

**Reference:** Phys.Rev. C11, 2022 (1975)

**Authors:** H.I.Liou, J.Rainwater, G.Hacken, U.N.Singh

**Title:** Neutron Resonance Spectroscopy:  $^{177}\text{Hf}$

**Keyword abstract:** NUCLEAR REACTIONS  $^{177}\text{Hf}(n,n)$ ,  $(n,\gamma)$ ,  $E=3-700$  eV; measured total  $\sigma(E)$ .  $^{178}\text{Hf}$  deduced resonances, level-width.

-----  
**Keynumber:** 1974HEZI

**Coden:** REPT USNDC-11 P10

**Keyword abstract:** NUCLEAR REACTIONS  $^{177}\text{Hf}(n,\gamma)$ ; measured  $\sigma(E\gamma), \gamma(t)$ .  $^{178m}\text{Hf}$  deduced  $T_{1/2}$ .

-----  
**Keynumber:** 1973SMZL

**Reference:** Priv.Comm. (December 1973)

**Authors:** R.K.Smithers

**Title:**

**Keyword abstract:** NUCLEAR REACTIONS  $^{177}\text{Hf}(n,\gamma)$ ,  $E$  not given; measured  $E\gamma, I\gamma$ .  $^{178}\text{Hf}$  deduced levels,  $J, \pi, \gamma$ -multipolarities.

-----  
**Keynumber:** 1973SMZH

**Coden:** REPT ANL-8035 P18

**Keyword abstract:** NUCLEAR REACTIONS  $^{177}, ^{179}\text{Hf}(n,\gamma)$ ; measured  $\sigma(E\gamma)$ .  $^{178}, ^{180}\text{Hf}$  deduced levels.

-----  
**Keynumber:** 1973ROYS

**Coden:** CONF Munich(Nucl Phys), Vol1 P524

**Keyword abstract:** NUCLEAR REACTIONS  $^{177}\text{Hf}(n,\gamma)$ ; measured  $E\gamma$ .  $^{178}\text{Hf}$  deduced transitions.

-----  
**Keynumber:** 1973PRZI

**Reference:** Spectra of Electromagnetic Transitions and Level Schemes Following Thermal Neutron Capture by Nuclides with  $A$  143-193, P.Prokofev, J.Berzins, G.Rezvaya, Eds., Publishing House 'Zinatne', Riga (1973)

**Authors:** P.Prokofev, M.Balodis, M.Beitins, Y.Berzin, V.Bondarenko, N.Kramer, A.Krumina, G.Rezvaya, L.Simonova

**Title:**

**Keyword abstract:** NUCLEAR REACTIONS  $^{143}, ^{145}\text{Nd}$ ,  $^{149}\text{Sm}$ ,  $^{167}\text{Er}$ ,  $^{174}\text{Yb}$ ,  $^{175}, ^{176}\text{Lu}$ ,  $^{177}, ^{178}\text{Hf}$ ,  $^{181}\text{Ta}$ ,  $^{186}\text{W}(n,\gamma)$ ,  $E=\text{thermal}$ ; measured  $E\gamma, I\gamma, I(\text{ce})$ . Deduced ICC.  $^{151}\text{Eu}$ ,  $^{155}\text{Gd}(n,\gamma)$ ,  $E=\text{thermal}$ ; measured  $E\gamma, I(\text{ce})$ . Deduced ICC.  $^{157}\text{Gd}$ ,  $^{162}, ^{164}\text{Dy}$ ,  $^{165}\text{Ho}$ ,  $^{168}\text{Yb}$ ,  $^{169}\text{Tm}(n,\gamma)$ ,  $E=\text{thermal}$ ; measured  $I$

(ce). Deduced ICC.  $^{191}, ^{193}\text{Ir}(n,\gamma), E=\text{thermal}$ ; measured  $E\gamma, I\gamma$ .  $^{144}\text{Nd}, ^{150}\text{Sm}, ^{156}, ^{158}\text{Gd}, ^{163}, ^{165}\text{Dy}, ^{166}\text{Ho}, ^{168}\text{Er}, ^{169}, ^{175}, ^{177}\text{Yb}, ^{170}\text{Tm}, ^{176}\text{Lu}, ^{178}\text{Hf}, ^{182}\text{Ta}$  deduced levels,  $J, \pi, \gamma$ -multipolarities.  $^{146}\text{Nd}, ^{185}\text{W}, ^{194}\text{Ir}$  deduced levels,  $J, \pi$ .  $^{152}\text{Eu}$  deduced transitions,  $\gamma$ -multipolarities.  $^{187}\text{W}, ^{192}\text{Ir}$  deduced transitions.

-----  
**Keynumber:** 1973KAYI

**Coden:** REPT INDC(HUN)-11/L P33

**Keyword abstract:** NUCLEAR REACTIONS  $^{155}\text{Gd}, ^{163}\text{Dy}, ^{177}\text{Hf}(n,\gamma)$ ; measured  $E\gamma, I\gamma$ .  $^{156}\text{Gd}, ^{164}\text{Dy}, ^{178}\text{Hf}$  resonances deduced level-width.

-----  
**Keynumber:** 1973HEYJ

**Coden:** REPT ANCR-1129 P43

**Keyword abstract:** RADIOACTIVITY  $^{178\text{m}}\text{Hf}$ ; measured  $T_{1/2}, E\gamma$ .

**Keyword abstract:** NUCLEAR REACTIONS  $^{177}\text{Hf}(n,\gamma)$ ; measured  $\sigma$ .

-----  
**Keynumber:** 1973HE19

**Reference:** Nucl.Phys. A211, 1 (1973)

**Authors:** R.G.Helmer, C.W.Reich

**Title:** Half-Life of  $^{178\text{m}_2}\text{Hf}$  and its Neutron Capture Production

**Keyword abstract:** RADIOACTIVITY  $^{178\text{m}}\text{Hf}$  [from  $^{177}\text{Hf}(n,\gamma)$ ]; measured  $T_{1/2}$ .

**Keyword abstract:** NUCLEAR REACTIONS  $^{177}\text{Hf}(n,\gamma), E=\text{reactor spectrum}$ ; measured  $\sigma$  for production of 31-y  $^{178\text{m}}\text{Hf}$ .

-----  
**Keynumber:** 1973GRZR

**Coden:** JOUR BAPSA 18 592 DE10

**Keyword abstract:** NUCLEAR REACTIONS  $^{177}\text{Hf}(n,\gamma); ^{178}\text{Hf}$  deduced levels.

-----  
**Keynumber:** 1973GRYG

**Coden:** REPT ANCR-1129 P33

**Keyword abstract:** NUCLEAR REACTIONS  $^{177}\text{Hf}(n,\gamma), E=2 \text{ keV}$ ; measured  $E\gamma, I\gamma$ .  $^{178}\text{Hf}$  deduced levels,  $J, \pi$ .

-----  
**Keynumber:** 1973DA30

**Reference:** Izv.Akad.Nauk SSSR, Ser.Fiz. 37, 1129 (1973); Bull.Acad.Sci.USSR, Phys.Ser. 37, No.5, 190 (1974)

**Authors:** L.S.Danelyan

**Title:** Nonstatic Effects in  $\gamma$ -Ray Spectra Emitted during the Decay of Neutron Resonances in  $^{147}\text{Sm}, ^{157}\text{Gd}$ , and  $^{177}\text{Hf}$

**Keyword abstract:** NUCLEAR REACTIONS  $^{147}\text{Sm}, ^{157}\text{Gd}, ^{177}\text{Hf}(n,\gamma), E=\text{resonance}$ ; measured  $\gamma$ -spectra; deduced non-statistical effects.

-----  
**Keynumber:** 1973COZD

**Coden:** REPT EANDC(E)157-U,P71

**Keyword abstract:** NUCLEAR REACTIONS  $^{91}\text{Zr}, ^{156}\text{Gd}(n,X), ^{177}\text{Hf}, ^{115}\text{In}(n,\gamma)$ ; measured  $\sigma(E, E\gamma)$ .  $^{92}\text{Zr}, ^{157}\text{Gd}$  deduced resonances;  $^{178}\text{Hf}, ^{116}\text{In}$  deduced levels.

**Keynumber:** 1972ROZF

**Coden:** CONF Budapest,Contributions,P52,10/11/72

**Keyword abstract:** NUCLEAR REACTIONS  $^{177}\text{Hf}(n,\gamma)$ , $E=10\text{-}600\text{ eV}$ ; measured  $\sigma(E;E\gamma)$ .  $^{178}\text{Hf}$  deduced resonance parameters,level-width.

**Keynumber:** 1972DAZM

**Coden:** CONF Budapest,Contributions,P254,10/13/72

**Keyword abstract:** NUCLEAR REACTIONS  $^{177}\text{Hf}(n,\gamma)$ ; measured  $I\gamma$ .  $^{178}\text{Hf}$  deduced levels, $J,\pi,K$ .

**Keynumber:** 1972COYW

**Coden:** CONF Budapest,Contributions,P12,10/11/72

**Keyword abstract:** NUCLEAR REACTIONS  $^{105}\text{Pd}$ ,  $^{177}\text{Hf}(n,\gamma)$ , measured  $E\gamma,I\gamma$ .  $^{106}\text{Pd}$ ,  $^{178}\text{Hf}$  deduced levels, $J,\pi$ ,population ratios.

**Keynumber:** 1971KIZF

**Coden:** REPT KAPL-3944,G J Kirouac,3/23/72

**Keyword abstract:** NUCLEAR REACTIONS  $^{176}$ ,  $^{177}$ ,  $^{178}$ ,  $^{179}$ ,  $^{180}\text{Hf}(n,\gamma)$ , $E=\text{thermal}$ ; measured  $\sigma$ .

**Keynumber:** 1971FO12

**Reference:** Nucl.Phys. A171, 353 (1971)

**Authors:** B.Fogelberg, A.Backlin

**Title:** Levels in  $^{178}\text{Hf}$  Studied in the  $(n,\gamma)$  Reaction

**Keyword abstract:** NUCLEAR REACTIONS  $^{177}\text{Hf}(n,\gamma)$ , $E=\text{thermal}$ ;measured $e\gamma,I\gamma,E(\text{ce}),I(\text{ce}),\gamma\gamma\text{-coin}$ .  $^{178}\text{Hf}$  deduced levels, $J, \pi,K,\gamma$ -multipolarity. Enriched target, $\text{Ge}(\text{Li})$  detectors.

**Keynumber:** 1970WE04

**Reference:** Phys.Rev. C1, 1501 (1970)

**Authors:** K.J.Wetzel, G.E.Thomas

**Title:** Method for Determining Spins of Neutron Resonances

**Keyword abstract:** NUCLEAR REACTIONS  $^{95}\text{Mo}$ ,  $^{105}\text{Pd}$ ,  $^{135}\text{Ba}$ ,  $^{167}\text{Er}$ ,  $^{177}\text{Hf}$ ,  $^{183}\text{W}(n,\gamma)$ ,  $E=\text{resonance}$ ; measured  $\sigma(E\gamma)$ .  $^{96}\text{Mo}$ ,  $^{106}\text{Pd}$ ,  $^{136}\text{Ba}$ ,  $^{168}\text{Er}$ ,  $^{178}\text{Hf}$ ,  $^{184}\text{W}$  deduced resonances, J.

**Keynumber:** 1970GRZQ

**Coden:** REPT IN-1407 P142

**Keyword abstract:** NUCLEAR REACTIONS  $^{177}\text{Hf}(n,\gamma)$ , $E=\text{thermal},2\text{ keV}$ ; measured  $E\gamma,I\gamma$ .  $^{178}\text{Hf}$  deduced levels, $J,\pi$ .

**Keynumber:** 1970GRZH

**Coden:** REPT IN-1407 P143

**Keyword abstract:** NUCLEAR REACTIONS  $^{177}\text{Hf}(n,\gamma)$ , $E=\text{thermal},2\text{ keV}$ ; measured  $E\gamma,I\gamma$ .  $^{178}\text{Hf}$  deduced levels, $J,\pi,K$ .

**Keynumber:** 1970COZG

**Coden:** REPT R T FI 7055,C Cocera,8/28/72

**Keyword abstract:** NUCLEAR REACTIONS  $^{177}$ ,  $^{179}\text{Hf}(n,\gamma)$ , $E < 300\text{ eV}$ ; measured  $I\gamma,\sigma(E;E\gamma)$ .  $^{178}$ ,  $^{180}\text{Hf}$  deduced resonances, $J$ ,level density.

**Keynumber:** 1970COZB

**Reference:** RT/FI-7055 (1970)

**Authors:** C.Coceva, F.Corvi, P.Giacobbe, M.Stefanon

**Title:** Spin-Dependence of Level Density in  $^{178}\text{Hf}$  and  $^{180}\text{Hf}$  by Resonance Neutron Capture Experiments

**Keyword abstract:** NUCLEAR REACTIONS  $^{177}, ^{179}\text{Hf}(n,\gamma), E < 300$  eV; measured  $\sigma(E,\gamma,\theta)$ .  $^{178}, ^{180}\text{Hf}$  deduced resonances,  $J, \pi$ .

-----  
**Keynumber:** 1969PR14

**Reference:** Izv.Akad.Nauk SSSR, Ser.Fiz. 33, 1655 (1969); See Also ANL-trans-815; Bull.Acad. Sci.USSR, Phys.Ser. 33, 1518 (1970)

**Authors:** P.T.Prokofev, G.L.Rezvaya

**Title:** The Level Scheme for  $^{178}\text{Hf}$

**Keyword abstract:** NUCLEAR REACTIONS  $^{177}\text{Hf}(n,\gamma), E = \text{thermal}$ ; measured  $E\gamma, I(\text{ce})$ .  $^{178}\text{Hf}$  deduced levels,  $J, \pi, \gamma$ -multipolarity, ICC. Enriched target.

-----  
**Keynumber:** 1969FA01

**Reference:** Nucl.Phys. A123, 616 (1969)

**Authors:** K.T.Faler, R.R.Spencer, R.A.Harlan

**Title:** Excited States in  $^{178}\text{Hf}$  from Resonance Neutron-Capture Gamma-Ray Studies

**Keyword abstract:** NUCLEAR REACTIONS  $^{177}\text{Hf}(n,\gamma), E = 0.06-8.8$  eV; measured  $E\gamma, \gamma\gamma$ -coin, resonance capture; deduced  $Q$ .  $^{178}\text{Hf}$  deduced levels. Enriched target, Ge(Li) detector.

-----  
**Keynumber:** 1968PR17

**Reference:** Latvijas PSR Zinatnu Akad.Vestis, Fiz.Teh.Zinatnu Ser., No.5 (1968)

**Authors:** P.Prokofev, G.Rezvaya

**Title:** Levels of  $^{178}\text{Hf}$  Subjected to Excitation at  $(n, e^-)$  Reaction

**Keyword abstract:** NUCLEAR REACTIONS  $^{177}\text{Hf}(n,\gamma), E = \text{thermal}$ ; measured  $E(\text{ce}), I(\text{ce})$ .  $^{178}\text{Hf}$  transitions deduced ICC,  $\gamma$ -multipolarity.

-----  
**Keynumber:** 1967CH37

**Reference:** J.Nucl.Sci.(Seoul) 7, 12 (1967)

**Authors:** M.-K.Chung

**Title:** High Resolution Gamma-Ray Spectroscopy with Lithium Ion Drifted Germanium Detectors - Part II

**Keyword abstract:** RADIOACTIVITY  $^{46\text{m}}\text{Sc}, ^{71}\text{Zn}, ^{75\text{m}}, ^{77\text{m}}\text{Ge}, ^{108}, ^{110}\text{Ag}, ^{161}\text{Gd}, ^{183\text{m}}, ^{185\text{m}}\text{W}, ^{235}\text{U}$ ; measured  $E\gamma, I\gamma$ .

**Keyword abstract:** NUCLEAR REACTIONS  $^{149}\text{Sm}, ^{177}\text{Hf}(n,\gamma), E = \text{thermal}$ ; measured  $E\gamma, I\gamma$ .  $^{150}\text{Sm}, ^{178}\text{Hf}$  deduced transitions.

-----  
**Keynumber:** 1966VO04

**Reference:** Nucl.Phys. 82, 441 (1966)

**Authors:** R.H.Vogt

**Title:** Gamma-Ray Spectra of  $^{124}\text{Te}, ^{164}\text{Dy}, ^{178}\text{Hf}$  and  $^{183}\text{W}$  from the Radiative Capture of Neutrons at Resonances

**Keyword abstract:** NUCLEAR REACTIONS  $^{123}\text{Te}, ^{163}\text{Dy}, ^{177}\text{Hf}, ^{182}\text{W}(n,\gamma) 1 < E < 5$  eV; measured  $E\gamma, \gamma\gamma$ -coin.  $^{124}\text{Te}, ^{164}\text{Dy}, ^{178}\text{Hf}, ^{183}\text{W}$  deduced levels. Natural targets.