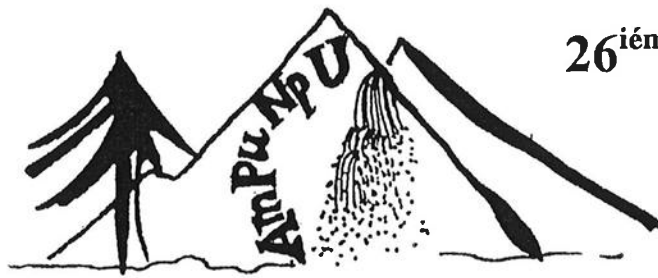




26<sup>èmes</sup> Journées  
des  
Actinides

April 10-14, 1996, Szklarska Poręba, Poland

Program  
and  
Abstracts



26<sup>èmes</sup> Journées  
des  
Actinides

April 10-14, 1996, Szklarska Poręba, Poland

### Organizing Committee

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*W.Trzebiatowski Institute of Low Temperature and Structure Research,  
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The 26<sup>èmes</sup> Journées des Actinides was sponsored by

*State Committee of Scientific Research*

*Committee of Physics*

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*State Atomic Agency*

The organization of this Meeting was possible due to the work of many staff members of the W. Trzebiatowski Institute for Low Temperature and Structure Research, Polish Academy of Sciences, Wrocław

# Scientific Program

## WEDNESDAY, APRIL 10

17.00 - 20.00 Registration

20.00 Welcome Dinner

## THURSDAY, APRIL 11

8.00 - 9.00 Registration

9.00 - 9.15 Welcome Address

9.15 - 10.30 **Session 1: General Properties**

Chairperson: M. S. S. Brooks

LT O1.1 X-ray Experiments on UO<sub>2</sub> Surfaces  
*Watson G., Gibbs D., Lander G.H., Gaulin B.D.,  
Matzke H.J. and Ellis W.P.*

LT O1.2 Recent Developments in Magneto-optics of f-Systems  
*Schoenes J.*

ST O1.3 Electronic Structure and Crystal Field of RO<sub>2</sub> (R=Pr, U)  
Dioxides Derived from Density Functional Calculations  
*Diviš M., Kuriplach J., Richter M. and Steinbeck L.*

10.30 - 11.00 Coffee Break

11.00 - 12.30 **Session 2: Semimetals I**

Chairperson: C. de Novion

LT O2.1 High-Temperature Resistivity Measurements  
on Plutonium Monochalcogenides  
*Gómez Marín E., Fournier J.M., Spirlet J.C.  
and Rebizant J.*

LT O2.2 Ab-initio Calculations of the Magneto-Optical Spectra  
of US, USe, UTe and UAsSe  
*Oppeneer P.M., Kraft T., Brooks M.S.S., Antonov V.N.  
and Eschrig H.*

LT O2.3 High Pressure Studies of Uranium Monopnictides  
*Braithwaite D., Goncharenko I.N., Mignot J.-M.,  
Ochiai A. and Vogt O.*

12.30 - 15.00 Lunch

15.00 - 17.00 **Session 3: Semimetals II**  
Chairperson: J. Schoenes

LT O3.1 Nonlinearity of the Inverse Magnetic Susceptibilities  
of Light Rare-earth and Actinide Monochalcogenides  
and Monopnictides Observed at High Temperatures (AB)  
*Vogt O., Hulliger F. and Mattenberger K.*

ST O3.2 On Origin of Single-Impurity-Kondo Like Scattering  
in Ferromagnet UAsSe  
*Henkie Z., Cichorek T., Fabrowski R. and Wojakowski A.*

ST O3.3 Antiferromagnetism of USnTe  
*Troć R., Szytula A., Blaise A., Burlet P.  
and Stepień-Damm J.*

ST O3.4 Neutron Diffraction Studies of the Binary Uranium  
Chalcogenide  $\alpha$ US<sub>2</sub>  
*Daoudi A., Cousson A., Paulus W., André G. and Noël H.*

ST O3.5 The Symmetry Analysis of Phase Transitions  
in Hexagonal Actinides  
*Sikora W.*

ST O3.6 Optical Properties: New Theoretical Results Support  
the Itinerant f Picture in CeN  
*Delin A., Johansson B., Eriksson O., Brooks M.S.S.  
and Wills J.M.*

ST O3.7 Fine Electronic Structure of Some Uranium Compounds  
*Radwański R.J., Kim-Ngan N.H. and Krzywanek K.*

17.00 - 17.30 Coffee Break

17.30 - 19.30

**Poster Session A**

Chairperson: L.Havela

- P1.1** Pressure Study of UCoAl Based Single Crystals  
*Andreev A.V., Bartashevich M.I., Goto T., Kamishima K., Sechovsky V. and Havela L.*
- P1.2** Polar Kerr Effect Spectroscopy in URhAl  
*Beránková P., Kučera M., Matyáš, Jr. M. and Menovsky A.A*
- P1.3** Structure, Magnetic and Transport Properties of Hexagonal UPtSn Single Crystals  
*Shlyk L., Waerenborgh J.C, Paixão J.A., Bonfait G., Amaro A., Almeida M., Godinho M. and Costa M.M.R.*
- P1.4** Investigation of Magnetic Properties of UPdSn by  $^{119}\text{Sn}$  Mössbauer Spectroscopy  
*Kruk R., Kmiec R., Łątka K., Tomala K., Troć R. and Tran V.H.*
- P1.5** Magnetic Properties of UTSn Compounds (T=Co, Rh, Ir, Ru) Studied by the  $^{119}\text{Sn}$  Mössbauer Spectroscopy  
*Kruk R., Kmiec R., Łątka K., Tomala K., Troć R. and Tran V.H.*
- P1.6** Chemical Bonding in UTSn (T=Pd, Au)  
*Reznik I. and Troć R.*
- P1.7** Spin-Glass-Like Properties and Irreversibility Line of UCuSi  
*Zięba A., Troć R., Tran V.H., Zaleski A., Włosewicz D., Plackowski T. and Mydlarz T.*
- P1.8** Magnetoresistance of UMSn (M=Ni, Pd, Au) and UPdGa in Magnetic Fields up to 13T  
*Levin E.M., Troć R. and Tran V.H.*
- P1.9** Crystal Structure Refinement and Thermopower Measurements on UNi<sub>2-δ</sub>Sn Single Crystals  
*Waerenborgh J.C., Shlyk L. and Almeida M.*

- P1.10** The Magnetic Structures of  $\text{UFe}_x\text{Al}_{12-x}$  Intermetallic Compounds  
*Rečko K., Biernacka M., Dobrzyński L., Perzyńska K., Satula D. and Waliszewski J., Suski W., Wochowska K., Andre G., Bouree F.*
- P1.11** Single Crystal Studies on  $\text{UFe}_6\text{Ga}_6$   
*Amaro A., Gonçalves A.P., Godinho M., Almeida M., Waerenborgh J.C, Paixão J.A. and Spirlet J.C.*
- P1.12** Magnetic Properties and  $^{57}\text{Fe}$  Mössbauer Effect in the  $\text{U}_2\text{Fe}_{17-x}\text{Ge}_x$  System  
*Olejniczak J., Suski W., Wochowski K. and Mydlarz T.*
- P1.13** Magnetic Properties and Crystallographic Structure of the  $\text{Np}_2\text{M}_{17}$  (M=Ni, Co) Intermetallic Compounds  
*Halevy I., Kimmel G., Potzel W. and Gal J.*
- P1.14** Low Temperature Electrical Resistivity of the  $\text{U}(\text{Cu},\text{Ni})_4\text{Al}_8$  System  
*Cichorek T., Suski W. and Wochowski K.*
- P1.15** Investigation of Actinide  $\text{An}_4\text{T}_7\text{X}_6$  Phase  
*Higgins E.J., Rebizant J., Stalios A.D., Walker C.T., Wastin F. and Hynes M.J.*
- P1.16** Electrical Resistivity of  $\text{Np}_4\text{Ru}_7\text{Ge}_6$   
*Wastin F., Bednarczyk E., Rebizant J. and Sanchez J.P.*
- P1.17** Rietveld Refinement  $\text{U}_{(1-x)}\text{Re}_4\text{Si}_2$  and  $\text{U}_2\text{Re}_3\text{Si}_5$   
*Koterlyn G.M., Davydov V.N. and Akselrud L.G.*
- P1.18** Peculiarities of the Interactions between the Components of the U-Transition Metals-Ge Systems  
*Bodak O.*
- P1.19** The Ternary System Silicon-Titanium-Uranium  
*Weitzer F., Noël H. and Rogl P.*

19.30 - 21.00 Dinner

21.00 - 21.30 Presentation of 27<sup>èmes</sup> Journées des Actinides

**FRIDAY, APRIL 12**

9.00 - 10.30     **Session 4: Semimetals III**  
Chairperson: J. Morkowski

- LT   **O4.1**     Magnetic Structures and Electronic Properties of  $U_3X_4$   
( $X=P, As, Sb$ )  
*Sandratskii L.M. and Kübler J.*
- LT   **O4.2**     Neutron Diffraction Study of Magnetic Structure  
of  $U_3Bi_4$  and  $U_3Sb_4$   
*Gukasov A., Wiśniewski P. and Henkie Z.*
- ST   **O4.3**     Crystal Structure and Magnetic Properties of a New  
Layered Ternary Uranium Telluride:  $Tl_{0.6}UTe_3$   
*Tougait O., Daoudi A., Potel M. and Noël H.*
- ST   **O4.4**      $Cu_{0.36}UTe_3$ : A New Telluride with Copper Inserted  
in the  $\alpha UTe_3$  Layered Framework: Synthesis, Crystal  
Structure and Magnetic Properties  
*Daoudi A., Potel M. and Noël H.*

10.30 - 11.00     Coffee Break

11.00 - 12.30     **Session 5: Intermetallics**  
Chairperson: G. H. Lander

- LT   **O5.1**     First-Principles Investigation of the „Giant” Magneto-  
Resistance and Magneto-Optical Conductivity in UNiGa  
*Antonov V.N., Oppeneer P.M., Perlov A.Ya.,  
Yaresko A.N. and Eschrig H.*
- ST   **O5.2**     Low-Temperature Magnetoresistance Study  
of UNiAl and UNiGe  
*Havela L. and Sechovský V.*
- LT   **O5.3**     Magnetic Properties of  $URu_{1-x}Pd_xGa$  by AC Magnetic  
Susceptibility and Neutron Diffraction Studies  
*Tran V.H., Troć R., André G., Bourée F. and Noël H.*

ST O5.4 UCo<sub>1-x</sub>Ru<sub>x</sub>Al - Ferromagnetism between Two Paramagnets  
*Andreev A.V., Bartashevich M.I., Sechovský V., Havela L., Gaviko V.S., Andreev D.A., Šebek J., Dremov R.V. and Kozlovskaya I.K.*

12.00 - 15.00 Polish Dinner

15.00 - 20.00 Excursions

20.00 - 21.00 Supper

21.00 Beer Party

## SATURDAY, APRIL 13

9.00 - 10.30

### Session 6: Chemistry

Chairperson: B. Kannelakopulos

- LT O6.1 Research on New Actinide Solid Compounds (Actinides=Np, Pu, or Am) : Synthesis, Characterisation, Properties, Behaviour under Irradiation  
*Beauvy M.*
- LT O6.2 U<sup>3+</sup>: New Activator Ion in Fluoride Matrix for Infrared Laser  
*Louis-Illemassene M., Simoni E., Gesland J.Y. and Hubert S.*
- ST O6.3 Optimization of Cation Detection by Capillary Zone Electrophoresis with Indirect UV Absorbance : Perspective for Actinides  
*Aupiais J.*
- ST O6.4 Detection of Actinides Ultra-Traces by Alpha Liquid Scintillation : Application to Pu, Am, and Cm  
*Aupiais J., Dacheux N.*

10.30 - 11.00 Coffee Break

11.00 - 12.00 **Session 7: Spectroscopy**

Chairperson: S. Hubert

- LT O7.1 Laser Studies of the  $\text{Cm}^{3+}$  Ion in Crystals of  $\text{LuPO}_4$  and  $\text{Cs}_2\text{NaYCl}_6$   
*Murdoch K.M., Illemassene M., Edelstein N.M., Cavellec R., Karbowski M., Simoni E., Hubert S., Abraham M.M. and Boatner L.A.*
- ST O7.2 Hydrotris(1-pyrazolyl)borates of Trivalent Uranium, Neptunium and Plutonium  
*Apostolidis C., Kanellakopoulos B. and Rebizant J.*
- ST O7.3 Absorption and Emission Spectra Analysis of  $\text{U}^{3+}$  Doped  $\text{RbY}_2\text{Cl}_7$  Single Crystals  
*Karbowski M., Drożdżyński J., Edelstein N., Murdoch K. and Hubert S.*

12.00 - 15.00 Visit to Szklarska Poręba

15.00 - 17.00 **Session 8: Semimetals III**

Chairperson: A.V. Andreev

- LT O8.1 Physical Properties of Transuranium 2:2:1 Intermetallic Compounds  
*Pereira L.C.J., Wastin F., Kanellakopoulos B., Rebizant J. and Spirlet J.C.*
- ST O8.2 Effect of the Substitution on the Physical Properties of  $\text{U}_2\text{Ni}_2\text{Sn}$   
*Laffargue D., Chevalier B., Matar S. and Bouree F.*
- LT O8.3 Density Functional Calculations of Magnetism in  $\text{Np}_2\text{T}_2\text{X}$  (T=Co, Ni, Ru, Rh, Pd, Ir, Pt; X=In, Sn) Compounds  
*Diviš M., Richter M. and Eschrig H.*
- LT O8.4 Ab-initio Calculations of the "Giant" Magnetoresistance in Antiferromagnetic  $\text{U}_2\text{Pd}_2\text{X}$  compounds (X=In, Sn)  
*Richter M., Zahn P., Diviš M. and Mertig I.*

ST O8.5 Magnetic Ordering in the Crystallographically-Irregular  
 $U(Co_{1-x}Ni_x)_2Ge_2$  System  
*Kuznietz M., Pinto H. and Melamud M.*

17.00 - 17.30 Coffee Break

17.30 - 19.30 **Poster Session B**  
Chairperson: H.Noël

- P2.1** Electrochemical Preparation of Uranium Amalgams from Aqueous Solutions and the Thermal Decomposition  
*Shiokawa Y., Hasegawa K., Konashi K., Tanaka K. and Takahashi M.*
- P2.2** Purification of Curium and Californium Isotopes from some Cationic and Anionic Impurities  
*Melnik M.I., Kuznetsov R.A., Karelin Ye.A. and Filimonov V.T.*
- P2.3** About the Possibility of Existence of  $Pa^{3+}$  and  $Th^{3+}$  in Solution  
*Kulyukhin S.A., Kamenskaya A.N., Mikheev N.B. and Rumer I.A.*
- P2.4** Absorption and Emission Spectra of Uranium(3+) Doped  $Cs_2LiYCl_6$  Single Crystals  
*Karbowiak M., Drożdżyński J., Simoni E. and Hubert S.*
- P2.5** Synthesis, Spectroscopic and Magnetic Properties of Rubidium Heptachlorodiuranate(III)  
*Karbowiak M., Hanuza J., Drożdżyński J. and Hermanowicz K.*
- P2.6** High Specific Activity Influence on Actinide Metals Properties  
*Seleznev A.G., Radchenko V.M., Kosulin N.S. and Gorbunov S.I.*
- P2.7** Up-conversion in  $LaCl_3$  Doped with  $U^{3+}$  and  $Pr^{3+}$  Ions  
*Dereń P.J., Feries J., Krupa J-C. and Stręk W.*

- P2.8** High Pressure Studies on Np Monopnictides  
*Ichas V., Braithwaite D., Spirlet J.C., Rebizant J. and Benedict U.*
- P2.9** Theoretical Splitting of the  $^3H_4$  Term of the  $U^{4+}$  Ion in the Uranium Oxychalcogenides  
*Gajek Z.*
- P2.10** High Energy Spectral Response of  $URu_2Si_2$   
*Wermeille D., Bernhoeft N., Flouquet J., Lejay P., Vettier C., Frost C.D. and Ecclstone R.S.*
- P2.11** Magneto optic Studies of  $UNi_2Si_2$   
*Kučera M., Beránková P., Matyáš, Jr. M. and Menovsky A.A.*
- P2.12** Magnetic Properties of the  $(U_{1-x}Nd_x)Co_2Ge_2$  System, Studied by Neutron-Diffraction and AC-Susceptibility Measurements  
*Caspi E., Kuznietz M., Etedgui H., Pinto H., Melamud M. and Shaked H.*
- P2.13** Single-Crystal Magnetization and Neutron Scattering Investigation of the Magnetic Structure of  $U_2Rh_2Sn$   
*Pereira L.C.J., Paixão J.A., Bourdarot F., Estrela P., Rebizant J., Godinho M., Almeida M. and Spirlet J.C.*
- P2.14** Magnetic and Transport Properties of the  $U_3T_3Sn_4$  Single Crystals (T=Ni, Cu)  
*Shlyk L., Troć R., Waerenborgh J.C., Paixão J.A., Costa M.M.R. and Almeida M.*
- P2.15** Pressure Effect on the Magnetic Susceptibility of  $U(Fe,Mn,Co)_2$  and  $UGa_3$   
*Grechnev G.E., Panfilov A.S., Svechkarev I.V., Czopnik A., Kaczorowski D. and Zentko A.*
- P2.16** Single-Crystal Study of Itinerant 5f-Electron Antiferromagnetism in  $UGa_3$   
*Kaczorowski D., Czopnik A., Jezowski A., Misiorek H., Zaleski A., Klamut P., Wołczyr M., Troć R. and Hauser R.*

**P2.17** Resonant X-ray Scattering from a Thin Film of UPd<sub>2</sub>Al<sub>3</sub>  
*Hiess A., Langridge S., Huth M., Gibbs D.  
and Lander G.H.*

**P2.18** Unusual Heavy Fermion State of UPd<sub>2</sub>Au<sub>3</sub>  
*Andraka B., Troć R., Cichorek T. and Tran V.H.*

**P2.19** Structure and Magnetic Properties of UFe<sub>6</sub>Al<sub>6</sub> Single Crystals  
*Gonçalves A.P., Estrela P., Godinho M., Spirlet J.C.,  
Waerenborgh J.C. and Almeida M.*

**P2.20** Spontaneous Magnetostriction in UT<sub>10</sub>Si<sub>2</sub>  
*Andreev A.V. and Zadvorkin S.M.*

20.00 Conference Banquet

## SUNDAY, APRIL 14

9.00 - 10.30 **Session 9: Intermetallics IV**  
Chairperson: M.Kuznietz

LT **O9.1** Calculated Equation of State and Magnetic Equation  
of State of UGa<sub>3</sub>  
*Brooks M.S.S.*

LT **O9.2** Magnetic Properties of Cubic NpGa<sub>3</sub>  
*Colineau E., Bourdarot F., Burlet P., Sanchez J.P.  
and Larroque J.*

ST **O9.3** Band Structure and Photoemission Spectra for USi<sub>3</sub>  
*Morkowski J., Szajek A. and Jezierski A.*

ST **O9.4** Hybridization of 5f(U) States in UM<sub>2</sub>Sn (M=Co, Ni, Rh,  
Pd) Ternary Stannides : Investigation by <sup>119</sup>Sn Mössbauer  
Spectroscopy  
*Chevalier B., Fournés L. and Etourneau J.*

- 10.30 - 11.00 Coffee Break
- 11.00 - 12.30 Conference Summary and Perspectives
- 12.30 - 15.00 Lunch

## **General Information**

### ***Oral Communications***

All speakers are requested to perform their presentation within the arranged time schedule including discussion.

LT - long talk (30 min); ST - short talk (15 min)

### ***Posters***

Posters should be mounted on Thursday (Session A) and Saturday (Session B) after lunch, and be removed before next-morning session.

PROGRAM OUTLINE

Wednesday April 10	Thursday April 11	Friday April 12	Saturday April 13	Sunday April 14
	Registration	Session 4	Session 6	Session 9
	Session 1	Coffee Break	Coffee Break	Coffee Break
	Coffee Break	Session 5	Session 7	Conference Summary
	Session 2	Polish Dinner	Visit to Szkłarska Poręba	Lunch
	Lunch	Excursions	Session 8	
	Session 3		Coffee Break	
	Coffee Break	Poster Session A	Poster Session B	
	Poster Session A	Supper	Conference Banquet	
	Dinner	Beer Party		
	27iemes JdA			
Registration				
Welcome Dinner				

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