

PROGRAM HYPERFINE 2016 CONFERENCE

Monday July 4th 2016

8.00-12.00 registration

9.00 Welcome

9.10 Official opening

9.30 **Eiko Torikai** (invited) Ultra slow muon microscope - a new method to study near surface and buried interfaces in materials and life science

Coffee

10.30 **Torben Molholt** (invited) Present and future applications of hyperfine interactions at ISOLDE/CERN

11.00 **Denes Georges** When crystallography can use help from Mössbauer spectroscopy

11.20 **Elaheh Sadrollahi** Magnetism of the Chromium Thio-Spinels $\text{Fe}_{1-x}\text{Cu}_x\text{Cr}_2\text{S}_4$ studied with Mössbauer Spectroscopy and μSR

11.40 **Valerie Augustyns** γ -Fe nanoparticles embedded in strontium titanate: towards novel artificial multiferroics

Lunch

14.00 **Anjali Panchwane** (invited) Temperature and field dependent ^{57}Fe Mössbauer study of polycrystalline multiferroic gadolinium orthoferrite

14.30 **Chachi Rojas-Ayala** Fe nanoclusters in thick Yb films: structural and magnetic properties

14.50 Pecha Kucha session (some confirmations pending)

- **Anatoly Tsvyashchenko** TDPAC Study of Hyperfine Interaction in Laves Phases
- **Denis Salamatin** Study of Hyperfine Interaction in the Cubic Phase $\text{REGe}_2.85$ (RE = Tb, Yb) by ^{111}Cd -TDPAC
- **Juliana Schell** Studying after effects by gamma-gamma and electron-gamma perturbed angular correlations
- **Michael Oshtrakh** The ^{57}Fe Hyperfine Interactions in Human Liver Ferritin and Its Iron-Polimaltose Analogues: the Heterogeneous Iron Core Model
- **Vasily Krylov** The screening effect of magnetic exchange interaction in the U- and RE-based intermetallic compounds

15.35 Poster session and drinks

Tuesday July 5th 2016

9.00 **Volker Schünemann** (invited) Exploring iron in molecules, proteins and cells

9.30 **Helena M. Petrilli** Theoretical hyperfine interactions study of Fe in Ferrioxamine B

9.50 **Jennifer Marx** Simulations of hyperfine parameters of dimetal-carboxylate-cofactor proteins

10.10 **Stavroula Pallada** Cd-111m and Hg-199m PAC spectroscopy applied to proteins and nucleic acids

Coffee

11.00 **Joshua Telser** (invited) EPR and ENDOR Studies of Iron-Sulfur Proteins and Enzymes: Multi-nuclear Hyperfine Determination

11.30 **Carlos O. Amorim** Utilization of PAC radioisotope trackers and DFT calculations to determine local environment of Hg(II) in dithiocarbamate functionalized particles for magnetic removal of Hg²⁺ from water

Lunch

14.00 **Hideki Ueno** (invited) Nuclear moment measurements using radioactive ion beams

14.30 **Carole Gaulard** LTNO technique in Europe: Present and Future

14.50 **Hanne Heylen** Beta-NMR/NQR on neutron-rich Al isotopes at the border of the island of inversion

15.10 **Mototsugu Mihara** Present status of the ¹²⁹Xe comagnetometer development for neutron EDM measurement

Coffee

16.00 **Tadashi Shimoda** (invited) Study of neutron-rich Mg isotopes

16.30 **Patrick Strasser** New Muonium HFS Measurements at J-PARC/MUSE

16.50 **Gregory Farooq-Smith** Collinear resonance ionisation spectroscopy of radioactive gallium isotopes

Wednesday July 6th 2016

9.00 **Hendrik Bluhm** (invited) Dephasing of electron spins in GaAs quantum dot due to the hyperfine interaction - From understanding the physics to effective mitigation

9.30 **Hisazumi Akai** Hyperfine interactions of f-electron systems

9.50 **Michael Reissner** Electric field gradient in FeSb₂

10.10 **Marius Arenz** ⁸³Rb(⁸³Kr) and ⁸³Rb(^{83m}Kr) as perturbed angular correlation nuclei

Coffee

11.00 **Leonardo Errico** (invited) Determination of the error bar on ab initio calculated electric-field gradients

11.30 **Takanobu Sugihara** NMR Detection of Short-Lived β-Emitter ¹²N Implanted in Water

12.00 Departure to Bruges for Conference excursion

Thursday July 7th 2016

9.00 **Stephen Blundell** (invited) The muon site problem: understanding where the muon goes and what it does

9.30 **Taizo Kawauchi** Anomaly of magnetic-field distribution in amorphous ice measured by μ -SR

9.50 **Johanna Jochum** Evolution of the phonon density of states during the α - to β -Sn phase transition

10.10 **Guo-qing Zheng** Electronic Orbital Order and Spin Nematicity in Iron-Pnictide High-Temperature Superconductors as Revealed by NMR

Coffee

11.00 **Tomasz Slezak** (invited) Magnetism of ultra-thin iron films probed by Nuclear Resonant Scattering of Synchrotron X-rays

11.30 **Arkadiusz Zarzycki** Formation of L10 FePd thin film alloy observed at different stages with Conversion Electron Mössbauer Spectroscopy.

Lunch (11.50)

14.00 **S.N. Mishra** Spin fluctuation and local magnetism of isolated Fe impurities in Pd_{1-x}V_x alloys studied by time differential perturbed angular distribution spectroscopy.

14.20 **S.K. Mohanta** Size dependent orbital magnetism of isolated Fe impurity in nanocrystalline Pb hosts observed through TDPAD measurements.

14.40 **Julian Munevar** Magnetic order of FeGa_{3-x}Ge_x Intermetallic single crystals as studied by muon spin rotation and ^{57}Fe Moessbauer spectroscopy

15.00 **Yutaka Yoshida** (invited) Diffusion Study on Fe in Si crystals by Mössbauer Spectroscopic Microscope

15.30 Pecha Kucha (some confirmations pending)

- **Numa Althubiti** State ordering and excitation energies from hyperfine-structure-assisted mass measurements of neutron-deficient $^{195,197}\text{Po}$ isomers
- **Debashis Banerjee** Solute-solute interactions in intermetallic compounds
- **Ryan Murray** Trapping of solute atoms at grain boundaries in GdNi₂
- **Haraldur Gunnlaugsson** Lattice location and properties of Sn in In/Sn implanted group IV semiconductors
- **Malgorzata Kasprzak** Progress of the nEDM experiment at the Paul Scherrer Institute

16.00 Poster session and drinks

19.00 Conference dinner

Friday July 8th 2016

9.30 **Catherine McCammon** (invited) It's about time: a new parameter to probe hyperfine interactions under extreme conditions

10.00 **Nancy Elewa** An ^{57}Fe Mössbauer Study of the Ordinary Chondrite meteorite Lynch-001

10.20 **Klaus Dieter Becker** High-temperature ^{57}Fe Mössbauer study of mixed ionic–electronic conducting $(\text{Ba}_{0.5}\text{Sr}_{0.5})(\text{Co}_{0.8}\text{Fe}_{0.2})\text{O}_{3-6}$

10.40 **Riccardo Teixeira** Study of orbital melting and Jahn-Teller distortions in $\text{La}(\text{Nd}, \text{Sm}, \text{Pr})\text{MnO}_3$ by means of perturbed angular correlations

Coffee

11.30 **Quentin Pankhurst** (invited) Biomedical Applications of Magnetic Nanoparticles

12.00 Presentation from the hosts of the next conference

12.15 Closing remarks

12.35 End of conference

Poster session 1 Monday July 4th 2016

NQR Application to the Study of Hydrogen Dynamics in Hydrogen-bonded Molecular Dimers	Asaji Tetsuo
^{53}Cr , ^{17}O and ^{14}N NQR in Ammonium Dichromate	Stephenson David
Applications of Mössbauer spectroscopy in heterogeneous oxidation catalysis	Dasireddy Venakata
Oxidation of CO utilising CuFe_2O_4 based carbon nanotube catalysts for use in fuel cells	Dasireddy Venakata
^2H NMR Study of Phase Transition and Hydrogen Dynamics in Hydrogen Bonded Organic Antiferroelectric 55DMBP- H_2ca	Asaji Tetsuo
Hyperfine field at La in the intermetallic compound LaMnSi_2 measured by PAC using ^{140}Ce nuclear probe	Domienikan Claudio
Hyperfine properties and magnetic behavior of « green rust » related compounds; Fe cations ordering that yields topotaxial reactions	Génin Jean-Marie R.
Discovery and occurrences of « green rust » related minerals, fougérite, trébeurdenite and mössbauerite, as characterized by their hyperfine properties	Génin Jean-Marie R.
Natural water purification by “green rust” related minerals, fougèrite and trébeurdenite, as monitored by Mössbauer spectroscopy	Génin Jean-Marie R.
Few-body physics with ultracold potassium rubidium mixtures	Horchani Ridha
Growth of Ga_2O_3 by furnace oxidation of GaN studied by perturbed angular correlations	Steffens Michael
Nuclear Electric Quadrupole Interactions in Liquids	Furman Gregory
Hidden Structural gamma-to-alpha Phase Transition in Cerium: Hyperfine Interactions Assessment	Tsvyashchenko Anatoly + Nikolaev Alexander
Density functional theory simulations for structural analysis of iron-sulfur clusters - impact of model and solvent	Müller Christina
The Influence of Coordinated Defects on Inhomogeneous Broadening in Cubic Structures.	Matheson P. L.
Topologically appropriate coordinates for $(\mathcal{V}_{\{zz\}}, \eta)$ joint probability distributions	Evenson William E.
Halogen and interhalogen complexes as the object of Hyperfine Interactions and DFT calculations	Poleshchuk Oleg
Ionization energy and cationic structure of gauche-isobutanal investigated by conformationally specific VUV-MATI spectroscopy	Kwon Chan Ho + KIM HONG LAE
Study of Fe based multiferroic oxide materials using low temperature high magnetic field ^{57}Fe Mössbauer spectroscopy	Varimalla Raghavendra Reddy
Perpendicular magnetic anisotropy in multiferroic BiFeO_3 - BaTiO_3 superlattices	Lazenka Vera
Solution oxygen 17-NMR application for observing a peroxidized cysteine residue in oxidized copper/zinc-superoxide dismutase	Fujiwara Noriko
Impact of Silica Environment on Hyperfine Interactions in Fe_2O_3 Nanoparticles	Kubičková Lenka + Kohout

	Jaroslav
Preparation and application of iron oxides nanoparticles functionalized with amino acids for inhibition of pathogens in wastewater	TRUJILLO HERRERA WILIAM
Use of Moessbauer spectroscopy to characterize new phases of tin(II)-containing fluorides prepared by leaching of other tin(II)-containing fluorides or chloride fluorides.	Denes Georges
NMR study on the quasi one-dimensional quantum spin magnet with ladder structure	Goto Takayuki + Kobori Shohei + Matsui Kazuki
Magnetic ordering of divalent europium in double perovskites $\text{Eu}_2\text{LnTaO}_6$ (Ln = rare earths)	Hinatsu Yukio
The Magnetic Structure on the Ground State of the Equilateral Triangular Spin Tube	Matsui Kazuki + Goto Takayuki
Electric field gradient calculations in some Ru based compounds: Re-evaluation of the Quadrupole moment of the 3/2+ first excited state in 99Ru.	Mohanta S.K.
Phase Transition Behavior of Hydrogen Bonded Liquid Crystal $(6\text{BA})_2\text{-(BPY)}_x$ as Studied by ^2H NMR	Mizuno Motohiro
Crystal structure and Moessbauer spectroscopy of 4-ammonium antipyridine trifluorostannate(II) monohydrate $(\text{C}_{11}\text{H}_{14}\text{N}_3\text{O})^+(\text{SnF}_3)^-\cdot\text{H}_2\text{O}$	Denes Georges
^{57}Fe Mössbauer studies of Fe dopants in magnetocaloric MnCoGe	Hutchison Wayne
LTNO versus Neutron Diffraction in TbNiAl ₄	Hutchison Wayne
Observations of Hyperfine Spectra of I ⁺	CHILUKOTI ASHOK
On the problem of identification of iron oxidation state in its low-spin complexes	Poleshchuk Oleg
Spin dynamics of BaGd _{2-x} Eu _x O ₄ as observed from muon spin rotation	Munevar Cagigas Julian Andres
Investigation of hyperfine interactions in immunoglobulin G with perturbed angular correlation spectroscopy using ^{111}Cd	Silva Andreia
^{151}Eu Mössbauer studies of some Eu silicides	Patil Sujata
A new source of high energy gammas at CSNSM (Orsay-France)	Roccia Stephanie + Gaulard Carole
Composition of α -Fe nanoparticles precipitated from CuFe alloy studied by hyperfine interactions	Kubániová Denisa + Cesnek Martin
Investigation of Rare Earth (RE = La, Dy, and Er) doping of HfO ₂ by perturbed angular correlation spectroscopy	Sales Tatiane
Analysis of low statistics counting data	Gins Wouter
Teaching hyperfine interactions in the 21 st century: status and future of an open on-line course	Cottenier S.
On the role of Fe in slags and inorganic polymers in the FeOx-CaO-SiO ₂ system: insights from ^{57}Fe Mössbauer spectroscopy	Douvalis A.P.
Characterization of ^{119}Sn nanowires using conversion electron Mössbauer spectroscopy.	Perez D.

ELECTRIC FIELD-INDUCED OXIDATION OF FERROMAGNETIC/FERROELECTRIC INTERFACES	Bisht M.
Mössbauer Spectroscopy Enlightening Magnetocaloric Properties of Mn-based Heusler alloys	Passamani Caetano Edson
Magnetism of the Chromium Thio-Spinels $Fe_{1-x}Cu_xCr_2S_4$ Studied with Mössbauer Spectroscopy and μ SR	Sadrollahi Elaheh

Poster session 2 Thursday July 7th 2016

Development of Mössbauer diffractometer by using nuclear resonant scattering at SPring-8 BL11XU	Nakamura Shin
Magnetic dipole moments in doubly-odd nuclei. Generalization to three-component systems.	Grodner Ernest
Hyperfine Interactions in Pd foils during D/H electrochemical loading	Bernardo da Silva Eric
Nuclear resonance scattering polarimetry on single crystals of iron spin crossover compounds	Scherthan Lena
Mossbauer and VSM study of low temperature annealing effects on Fe-Si-B amorphous alloy	Habibi Safdar
Magnetic fluctuations in $\text{Li}_x(\text{NH}_3)_y(\text{NH}_2)_{1-y}\text{Fe}_2\text{Se}_2$ superconductor under pressure	Shylin Sergii
Annealing studies in emission Mössbauer spectroscopy using short lived isotopes	Gunnlaugsson H. P.
Nuclear Resonant Scattering at the High Resolution Dynamics Beamline P01 - PETRA III	Herlitschke Marcus
g-factor measurement of 2738 keV isomer in ^{135}La	Saha Sudipta
Hyperfine Study of Phase Transition in Mn-doped TiO_2 and Ab initio Calculation	Banerjee Debashis
TDPAD measurements of magnetic hyperfine field for ^{132}Ba in ferromagnetic Ni	Saha Sudipta
Electric field gradients in $\text{Zr}_7\text{Ni}_{10}$ and $\text{Hf}_7\text{Ni}_{10}$ at ^{181}Ta site; perturbed angular correlation measurements and first principles calculations	Dey Sourav + Dey Chandi + Saha Satyajit + Belošević-Čavor Jelena
Experimental and ab-initio Study of the Electric Field Gradients at Ta and Cd Impurities in Hf_2Ge and Hf_2Si	Kulińska Agnieszka
Hyperfine interactions of ^8Li in Li-ion conductor $\text{Li}_7\text{La}_3\text{Zr}_2\text{O}_{12}$	Mihara Mototsugu
Nearest neighbourhood influence on the magnetic hyperfine fields at the Fe sites in Fe-Mo-Al alloys	Gil Rebaza Arles
Huge negative magnetic hyperfine fields for ^{111}Cd probe nuclei in the Fe_3X (X=C, Ge, and Ga) compounds with specific properties	Krylov Vasily I.
The ^{57}Fe Hyperfine Interactions in the Iron-Bearing Phases in Some LL Ordinary Chondrites	Oshtrakh Michael
Internal magnetic field at La and Ba in Fe at room temperature	Bansal Neeraj
g-factor measurement of 23/2+ isomeric state in ^{135}La	Bansal Neeraj
MOSSBAUER STUDY OF IRON HYDROXIDE PARTICLES ACCUMULATION IN LABORATORY ANIMALS	Semenov Valentin
Distribution of Fe atoms in Aurivillius phases obtained with NGR spectroscopy.	Semenov Valentin
Low-temperature properties of Sr-Ca-Cu-O superconducting structure substituted by iron and europium	Sklyarova Anastasia
Indium-Defect Interactions in FCC and BCC Metals Studied Using the Modified Embedded Atom Method	Zacate Matthew
Site occupation of indium and jump frequencies of cadmium in FeGa_3	Newhouse Randal
The effect of swift heavy ion irradiation on Fe clusters formed in ion implanted MgO	Bharuth-Ram Krish

¹¹⁹ Sn emission Mössbauer Spectroscopy study of In/Sn implanted ZnO single crystal	Torben Esmann Møllholt
Emission Mössbauer Spectroscopy study of C implanted ZnO single crystals	Bharuth-Ram Krishanlal
An ⁵⁷ Fe Mössbauer Study of the Chainpur meteorite	Elewa Nancy
Structural investigation and Hyperfine Interactions of BaBi _x La _x Fe _{12-2x} O ₁₉ (0.0 ≤ x ≤ 0.5) hexaferrites	Gungunes Hakan
Local Fields at Nonmagnetic Impurity Sites in a Perovskite La _{0.7} Ca _{0.3} MnO ₃	Sato Wataru
"After-effects" in ¹¹¹ In → ¹¹¹ Cd-doped Al ₂ O ₃ semiconductor: a modelization from first principles	Darriba Germán Nicolás
Stabilization of Helical Spin Structures in Magnetic Layer Systems	Gollwitzer Jakob
Study of isolated ¹⁸¹ Ta impurities in α-Al ₂ O ₃	Darriba Germán Nicolás
Hyperfine interactions in nanocrystallized NANOPERM-type metallic glass containing Mo	Cesnek Martin + Kubániová Denisa
Ab initio study of electronic, magnetic and hyperfine interactions at the Fe sites of Ti-magnetites	Mudarra Navarro Azucena
Ab initio study of the electronic structure and the hyperfine interactions at Fe/Cd sites in pristine, defective and Cd-doped ZnFe ₂ O ₄	Melo Quintero Jhon
First-principles calculations of the magnetic hyperfine field at Cd sites in RECd (RE = rare-earth element)	Pereira Luciano Fabricio
Hydrogen absorption effects on the physical properties of ball-milled LaNiSn intermetallic compounds	André-Filho J.
Structural and Electronic characterization of ¹⁸¹ Hf probes in GaN using Perturbed Angular Correlations	Barbosa Marcelo
Temperature anomalies of the hyperfine magnetic fields on ¹¹¹ Cd probe nuclei in ferro- and antiferromagnetic phases of the ordered FeRh alloys	Krylov V. I.
Influence of oxygen atmosphere in the annealing of HfO ₂ thin films studied by perturbed angular correlation spectroscopy	Henrique de Moraes Cavalcante Fabio
Study of CeRu ₂ Ge ₂ with perturbed angular correlation spectroscopy	Cavalcante Fabio
Positron Annihilation Lifetime Measurements and *ab-initio* Calculations on Al-doped ZnO Semiconductor	Damonte Laura Cristina
Implantation damage in Fe implanted ZnO	Gunnlaugsson Haraldur Páll
New Muonium HFS Measurements at J-PARC/MUSE	Strasser Patrick
Collinear resonance ionisation spectroscopy of radioactive gallium isotopes	Farooq-Smith Gregory