16th International Conference on Positron Annihilation 2012

(ICPA-16)

Journal of Physics: Conference Series Volume 443

Bristol, United Kingdom
19-24 August 2012

Editors:

Ashraf Alam
Stephen Dugdale

Paul Coleman
Mina Roussenova

ISBN: 978-1-62748-675-0
ISSN: 1742-6588
Papers

Fundamentals

012001 Positronium formation in molecular oxygen OPEN ACCESS J Archer, S M Trilov and P G Coleman

012002 The sub-THz direct spectroscopy of positronium hyperfine splitting OPEN ACCESS A Miyazaki, T Yamazaki, T Suehara, T Namba, S Asai, T Kobayashi, H Saito, Y Tatsumatsu, I Ogawa and T Idehara

012003 A simple shape-free model for pore-size estimation with positron annihilation lifetime spectroscopy OPEN ACCESS K Wada and T Hyodo

\(e^+/Ps\) interactions with matter

012004 Exchange and correlation effects in the strongly interacting He-Ps system OPEN ACCESS A Zubiaga, F Tuomisto and M J Puska

Anti-hydrogen physics

012005 Trapped antihydrogen: A new frontier in fundamental physics Madsen (The ALPHA Collaboration)

012006 Linac-based positron source and generation of a high density positronium cloud for the GBAR experiment OPEN ACCESS L Liszkay, P Comini, C Corbel, P Debu, P Dupré, P Grandemange, P Pérez, J-M Rey, N Ruiz and Y Sacquin

012007 \(\bar{H}\) and \(\bar{H}^+\) production cross sections for the GBAR experiment P Comini and P-A Hervieux

Metals, oxides and theoretical
012008 Vacancy clusters in ultra fine grained metals prepared by severe plastic deformation OPEN ACCESS J Čižek, O Melikhova, Z Barnovská, I Procházka and R K Islamgaliev

012009 High-temperature cuprate superconductors studied by x-ray Compton scattering and positron annihilation spectroscopies OPEN ACCESS B Barbiellini

012010 Microstructural Characterization of Ferritic/Martensitic Steels by Positron Annihilation Spectroscopy OPEN ACCESS S H Babu, G Amarendra, R Rajaraman and C S Sundar

012011 What we can learn from magnetic Compton scattering: application to the determination of spin polarization OPEN ACCESS J A Duffy

012012 PALS combined with Charpy-V tests at WWER reactor pressure vessel steels OPEN ACCESS V Slugeň, A Kryukov, M Petriska, J Veterníková, S Sojak, V Sabelová and R Hinca

012013 Positron annihilation sites in nano lead sulfide powders Rempel, A A Valeeva, K Sato and N S Kozhevnikova

012014 Dielectric properties and structural defects in $\text{BaTi}_{1-x}\text{Sn}_x\text{O}_3$ ceramics OPEN ACCESS Z Lijuan, W Lihai, L Jiandang, C Bin, Z Minglei and Y Bangjiao

012015 Positron Annihilation Study of Cs-Deficient Pollucite Guagliardo, E R Vance, K Sudarshan, J Davis, J F Williams, C Ranganathaiah and S Samarin


012017 Cu Precipitates in Fe Ion Irradiated Fe-Cu Alloys Studied Using Positron Techniques OPEN ACCESS X Z Cao, P Zhang, Q Xu, K Sato, H Tsuchida, G D Cheng,
H B Wu, X P Jiang, R S Yu, B Y Wang and L Wei

012018 **Defect studies of ZnO films prepared by pulsed laser deposition on various substrates** OPEN ACCESS O Melikhova, J Čížek, I Procházka, R Kužel, M Novotný, J Buliř, J Lančok, W Anwand, G Brauer, J Connolly, E McCarthy, S Krishnamurthy and J-P Mosnier

012019 **Vacancy clustering in pure metals: some first principle calculations of positron lifetimes and momentum distributions** OPEN ACCESS C R Luna, C Macchi, A Juan and A Somoza

012020 **Effects of oxide distributed in grain boundaries on microstructure stability of nanocrystalline metals** OPEN ACCESS K Zhou, H Li, J B Pang and Z Wang

012021 **Vacancy Formation Enthalpy in Polycrystalline Depleted Uranium** ACCESS K R Lund, K G Lynn, M H Weber and M A Okuniewski

012022 **Positron annihilation study of free volume in electron irradiated Zr$_{50}$Cu$_{40}$Al$_{10}$ bulk glassy alloy: Effects of thermal relaxation before irradiation** OPEN ACCESS N Onodera, A Ishii, A Iwase, Y Yokoyama, K Sato, Q Xu, T Yoshiie and F Hori

012023 **Cavity nucleation and growth during helium implantation and neutron irradiation of Fe and steel** OPEN ACCESS M Eldrup and B N Singh

012024 **Coincidence Doppler Broadening of Positron Annihilation Radiation in Fe** ACCESS E do Nascimento, V R Vanin, N L Maidana and O Helene

012025 **Vacancy-induced hardening in Fe-Al alloys** OPEN ACCESS F Lukáč, J Čížek, I Procházka, Y Jirásková, D Janíčkovič, W Anwand and G Brauer

012026 **Positron annihilation studies of zirconia doped with metal cations of different valence** OPEN ACCESS I Prochazka, J Cizek, O Melikhova, T E Konstantinova, I A Danilenko, I A Yashchishyn, W Anwand and G Brauer
012027 **Effect of carbon on copper precipitation in deformed Fe-based alloys studied by positron annihilation spectroscopy** OPEN ACCESS S Zhang, H Schut, E Brück, S van der Zwaag and N H van Dijk

012028 **Skyrmion-like Solitons and Topological Quasi-positronium in Graphite-potassium Intercalation Compounds** OPEN ACCESS M Saito, T Sasaki and I Kanazawa

012029 **Positron annihilation study of the Mg-Zn -Y alloys with long period stacking ordered (LPSO) structures** OPEN ACCESS H X Xu, K Inoue, Y Nagai, T Toyama, Y Matsukawa, A Kuramoto, D Egusa, E Abe and B J Ye

012030 **Monovacancies and Na substitutional defects in PbTe: theoretical positron annihilation study** OPEN ACCESS J D Liu, B Cheng, L J Zhang, J Zhang, H M Weng and B J Ye

012031 **Vacancy migration process in F82H and Fe-Cr binary alloy using positron annihilation lifetime measurement** OPEN ACCESS K Sato, Q Xu, D Hamaguchi, S S Huang and T Yoshiie

012032 **Defect investigations of an iron-nickel meteorite** OPEN ACCESS P Parz, M Leitner, W Sprengel, H Reingruber and W Puff

012033 **Comprehensive defect characterization of different iron samples after severe plastic deformation** OPEN ACCESS W Puff, X Zhou, B Oberdorfer, B Scherwitzl, P Parz, W Sprengel and R Würschum

012034 **Helium implanted RAFM steels studied by positron beam Doppler Broadening and Thermal Desorption Spectroscopy** OPEN ACCESS I Carvalho, H Schut, A Fedorov, N Luzginova, P Desgardin and J Sietsma

012035 **Effect of heterogeneous distributed intermetallic precipitates on accumulation of vacancy-like defects in irradiated Fe-Ni-based alloys studied by positron annihilation** OPEN ACCESS D A Perminov, A P Druzhkov and V L Arbuzov

012036 **PLEPS study of ion implanted and annealed Fe-11.62%Cr alloys** OPEN ACCESS S Sojak, V Slugeñ, W Egger, L Ravelli, M Petriska, S Stanček, M Sahul, M
Skarba, P Priputen, M Stacho, J Veterníková, R Hinca and V Sabelová

012037 Effects of proton irradiation on Chinese domestic RPV steels by variable energy positron annihilation spectroscopy OPEN ACCESS J Jiang, Y C Wu, S J Wang, X B Liu and R S Wang

012038 Surface states and annihilation characteristics of positrons trapped at the oxidized Cu(100) surface OPEN ACCESS N G Fazleev and A H Weiss

012039 Defects structure characterization of NiMnGa alloys by PALS D Merida, J A Garcia, F Plazaola, V Sanchez-Alarcos, J I Pérez-Landazábal and V Recarte

Semi-conducting solids

012040 Nano sulfide and oxide semiconductors as promising materials for studies by positron annihilation OPEN ACCESS P M G Nambissan

012041 Observation of spatial distribution of vacancy defects in semiconductor by positron microscope and electron beam induced current measurement OPEN ACCESS M Maekawa and A Kawasuso

012042 Acceptors in undoped GaSb; the role of vacancy defects OPEN ACCESS J Kujala, J Slotte and F Tuomisto

012043 In-situ positron lifetime spectroscopy of radiation damage by simultaneous irradiation of slow-positron and ion beams OPEN ACCESS A Kinomura, R Suzuki, T Ohdaira, N Oshima, B E O'Rourke and T Nishijima

Polymers and soft matter

012044 PALS: A unique probe for the molecular organisation of biopolymer matrices OPEN ACCESS M Roussenova and M A Alam

012045 Positron lifetime study of poly(dimethylsiloxane) based polymer-nanoparticle composites OPEN ACCESS D J Hughes, M V Roussenova, P Beavis, A C Swain and M
012046 Study of bicontinuous phase in (TTAB+pentanol)/water/n-octane reverse micellar system using positron lifetime spectroscopy
OPEN ACCESS K C Singh, R Yadav and P H Khani

012047 Positron annihilation lifetime study of interfaces in ternary polymer blends
OPEN ACCESS D Meghala, P Ramya, T Pasang, J M Raj, C Ranganathaiah and J F Williams

012048 Interface profile studies in immiscible and partially miscible binary polymer blends from free volume measurement
OPEN ACCESS P Ramya, D Meghala, T Pasang, J M Raj, C Ranganathaiah and J F Williams

012049 Investigation of microstructure and conducting mechanism of nanocomposite polymeric electrolytes with rectorite clay by PALS
OPEN ACCESS S Gao, J Gong, X L Yan, G B Xue, J Zhong and B Wang

012050 Vacancy profile in reverse osmosis membranes studied by positron annihilation lifetime measurements and molecular dynamics simulations
OPEN ACCESS A Shimazu, H Goto, T Shintani, M Hirose, R Suzuki and Y Kobayashi

012051 Infiltration and Selective Interactions at the Interface in Polymer-Oxide Hybrid Solar Cells
OPEN ACCESS R Ferragut, S Aghion, F Moia, M Binda, E V Canesi, G Lanzani and A Petrozza doi:10.1088/1742-6596/443/1/012051 Tag this article Abstract References Full text PDF (469 KB)

012052 Degradation process of fuel cell membrane observed by positron
OPEN ACCESS Y Honda, Y Aoyagi, S Tojo, G Watanabe, Y Akiyama and S Nishijima doi:10.1088/1742-6596/443/1/012052 Tag this article Abstract References Full text PDF (747 KB)

012053 Free volumes studies in Thymoquinone and Carvone β-cyclodextrin nanoparticles by positron annihilation lifetime spectroscopy
OPEN ACCESS M F F Marques, P M Gordo and A M da Silva doi:10.1088/1742-6596/443/1/012053 Tag this article Abstract References Full text PDF (339 KB)

012054 Positron annihilation lifetime spectroscopy of mechanically milled protein fibre powders and their free volume aspects
OPEN ACCESS K Patil, S Sellaiyan, R
Rajkhowa, T Tsuzuki, T Lin, S V Smith, X Wang and A Uedono

012055  Positron annihilation lifetime spectroscopy study on epoxy moisture absorption
OPEN ACCESS P M Gordo, J M M Luis, M F F Marques, M D Naia and J J M Morais

012056  A nanostructural investigation of the effect of glycerol on the molecular packing, thermodynamic state and water sorption behaviour of glassy gelatin films
OPEN ACCESS P Díaz-Calderón, M Roussenova, J Enrione and M A Alam

Liquids

012057  Account of the intratrack radiolytic processes for interpretation of the AMOC spectrum of liquid water
OPEN ACCESS D S Zvezhinskiy, M Butterling, A Wagner, R Krause-Rehberg and S V Stepanov

012058  Observations of the growth and sublimation of water ice films by variable-energy positron annihilation spectroscopy
OPEN ACCESS S Townrow, P G Coleman, Y C Wu, J Jiang and S J Wang

012059  PALS and DSC study of nanopores partially filled by hexadecane
ACCESS O Šauša, E Illeková, J Krištiak, D Berek and E Macová

012060  Positronium bubble formation in room temperature ionic liquids
T Hirade and T Oka

Porous and layered structures

012061  Study of Positronium formation in nano-channelled silicon as a function of sample temperature
OPEN ACCESS S Mariazzi, L DiNoto, L Ravelli, W Egger and R S Brusa

012062  Ortho-positronium localization in pores of Vycor glass at low temperature
ACCESS R Zaleski

012063  Positron Annihilation Studies of Mesoporous Silica MCM-41
OPEN ACCESS J F Williams, P Guagliardo, K Sudarshan, C Ranganathaiah, G Koutsantonis, N Hondow
and S Samarin

012064 Production and thermalization of positronium in homogeneous porous silica

012065 Positron annihilation characteristics in multi-wall carbon nanotubes with different average diameters

012066 Tuning porosity of silica films by using various surfactants and changing their loading: A study of positron annihilation Doppler broadening based on a slow positron beam

012067 Material characterization for advanced Si LSI process technology by means of positron annihilation

012068 Reflection high-energy positron diffraction: the past 15 years and the future

012069 Monte Carlo simulations of the extraction of slow positrons into gas through thin SiN windows

012070 Positron Re-emission Studies from W (100)

012071 In-situ (C)DBS at high temperatures at the NEPOMUC positron beam line

012072 Flash lamp annealing of tungsten surfaces marks a new way to optimized slow positron yields
Skorupa and G Brauer

012073 Optimization of growth parameters of TiO$_2$ thin films using a slow positron beam  
OPEN ACCESS M Butterling, W Anwand, S Cornelius, K Potzger, A Smekhova, M Vinnichenko and A Wagner

012074 Optimization of a multi-ring detector for Ps time of flight measurements  
ACCESS L D Noto, M Benetti, S Mariazzi, G-F D Betta and R S Brusa

012075 Efficient emission of positronium atoms from an Na-coated polycrystalline tungsten surface  
OPEN ACCESS H Terabe, S Iida, K Wada, T Hyodo, A Yagishita and Y Nagashima

012076 Study of Neutron Induced Defects in Ceramics using the GiPS Facility  

012077 Status of the Linac based positron source at Saclay  
OPEN ACCESS J-M Rey, G Coulloux, P Debu, H Dzitko, P Hardy, L Liszkay, P Lotrus, T Muranaka, C Noel, P Pérez, O Pierret, N Ruiz and Y Sacquin

012078 Measurement of the Positron Annihilation Induced Auger Electron Spectrum from Ag(100)  
OPEN ACCESS P Joglekar, K Shastry, N G Fazleev and A H Weiss

Advances in techniques

012079 The Upgrade of the Neutron Induced Positron Source NEPOMUC  
OPEN ACCESS C Hugenschmidt, H Ceeh, T Gigl, F Lippert, C Piochacz, P Pikart, M Reiner, J Weber and S Zimnik

012080 Fast inorganic scintillators – status and outlook  
OPEN ACCESS R W Novotny

012081 Positron beams from small accelerators and status of a novel positron storage project  
012082 New experiment stations at KEK Slow Positron Facility OPEN ACCESS K Wada, T Hyodo, T Kosuge, Y Saito, M Ikeda, S Ohsawa, T Shidara, K Michishio, T Tachibana, H Terabe, R H Suzuki, Y Nagashima, Y Fukaya, M Maekawa, I Mochizuki and A Kawasuso

012083 The Bristol HIDAC 2D-ACAR Spectrometer OPEN ACCESS S B Dugdale, J Laverock, C Utfeld, M A Alam, T D Haynes, D Billington and D Ernsting

012084 Spin-polarized positron annihilation spectroscopy for spintronics applications OPEN ACCESS A Kawasuso, Y Fukaya, M Maekawa, I Mochizuki and H Zhang

012085 A TOF-PET Detector based on Quadrant-Sharing PMTs and Optimized Leading-edge Timing Method OPEN ACCESS Y Wang, J Liu, D Li, T Zhang, Z Zhang, X Cao, B Wang and L Wei

012086 QtCDB2 software for coincidence Doppler broadening measurement system OPEN ACCESS M Petriska, V Slugeň, V Sabelová, S Soják and J Veterníková

012087 Software for analysis of waveforms acquired by digital Doppler broadening spectrometer OPEN ACCESS M Vlček, J Čížek and I Procházka


012089 Determination of electron binding energies in two-dimensional Coincident Doppler Broadening spectra OPEN ACCESS P Pikart and C Hugenschmidt

012090 Development of a sample chamber with humidity control for an atmospheric positron probe microanalyzer OPEN ACCESS W Zhou, N Oshima, Z Chen, K Ito, B E O'Rourke, R Kuroda, R Suzuki, H Yanagishita, T Tsutsui, A Uedono and N Hayashizaki
Position-resolved Positron Annihilation Lifetime Spectroscopy
A Wagner, M Butterling, F Fiedler, F Fritz, M Kempe and T E Cowan

First 2D-ACAR Measurements on Cu with the new Spectrometer at TUM
ACCESS J A Weber, P Böni, H Ceeh, M Leitner and C Hugenschmidt

A novel setup for the pulsing and energy enhancement of a positron beam
ACCESS C Piochacz and C Hugenschmidt

First measurements with the Munich 2D-ACAR spectrometer on Cr
ACCESS H Ceeh, J Weber, C Hugenschmidt, M Leitner and P Böni

Development of a new time and position resolving detector for the pulsed low energy positron system PLEPS
OPEN ACCESS U Ackermann, W Egger, P Sperr, B Löwe, L Ravelli, G Kögel, G Dollinger and O Jagutzki

Geant4 simulation of the effect of backscattered positrons on the lifetime spectra of PLEPS
OPEN ACCESS L Ravelli, B Löwe, W Egger, G Kögel, P Sperr and G Dollinger

Positron annihilation lifetime spectroscopy based on secondary electron emission from carbon foil
OPEN ACCESS C K Ng, B Yang and S Fung

A position sensitive germanium detector for the measurement of angular deviation of annihilation radiation
OPEN ACCESS B Löwe, M Reiner, W Egger, C Hugenschmidt and G Dollinger

Optimization of the Scintillator Size for Positron Lifetime Measurements
ACCESS M Yamawaki, Y Kobayashi, K Hattori and Y Watanabe