

Publications for H. J. Whitlow b. 31-03-1954

Doctoral dissertations

1. *Low energy implantation of silicon*. H.J. Whitlow. D. Phil. Thesis. University of Sussex 1980.
2. *Ion-Materials Interactions and their Application*. H.J. Whitlow, D.Sc. thesis, University of Bath 1998.

Publications in international journals with referee procedure.

1. Nucl. Instrum. and Method. 200(1982)491. *Range distributions and thermal-annealing properties of low-energy arsenic and indium implants in silicon*. H.J. Whitlow, P. Blood, B.W. Farmery, D.J. O'Connor, J.M. Shannon and M.W. Thompson.
2. Appl. Phys. A29(1982)141. *Short- and long-range ion-beam mixing in Cu:Al, Influence of interfacial oxide*. F. Besenbacher, J. Böttiger, S.K. Nielsen and H.J. Whitlow.
3. Surface Sci. 123(1982)39. *Measurements of angular distributions of sputtered material as a new tool for surface-segregation studies: segregation in CuPt alloys*. H.H. Andersen, V. Chernysh, B. Stenum, T. Sørensen and H.J. Whitlow.
4. Nucl. Instrum. and Method. 209/210(1983)487. *Surface segregation during alloy sputtering and implantation*. H.H. Andersen, B. Stenum, T. Sørensen and H.J. Whitlow.
5. J. Nucl. Material. 115(1983)347. *Lateral stress-induced blistering of aluminium films under helium irradiation*. S.E. Donnelly, M. Renier, A.A. Lucas and H.J. Whitlow.
6. Radiation Effects 72(1983)245. *Measurements of the emission spectra of LiF during thermoluminescence*. P.D. Townsend, K. Ahmed, P.J. Chandler, S.W.S. McKeever and H.J. Whitlow.
7. Catgut Acoust. Soc. Newslett. 40(1983)21. *Analysis of sound spectra from bowed violins and violas*. P. Barnes, P.J. Chandler, L. Cooke, S. Fredin, G. Hammel, P.D. Townsend, H.J. Whitlow and L. Wilzen.
8. Vacuum 33(1983)411. *Apparatus for measurement of the angular distribution of particles sputtered from targets at high temperatures*. H.H. Andersen, B.J. Jeppesen, S. Olesen, B. Stenum, T. Sørensen and H.J. Whitlow.
9. Nucl. Instrum. and Method. 218(1983)468. *Wear traces and patination on Danish flint artefacts*. H.H. Andersen and H.J. Whitlow.
10. Nucl. Instrum. and Method. 218(1983)684. *Low-temperature ion-beam mixing of platinum markers in iron*. J. Böttiger, S.K. Nielsen, H.J. Whitlow and P. Wriedt.
11. Nucl. Instrum. and Method. B2(1984)601. *Transients in the composition of material sputtered from alloy targets*. H.H. Andersen, B. Stenum, T. Sørensen and H.J. Whitlow.
12. Nucl. Instrum. and Method. B2(1984)623. *Temperature dependence of the angular distribution of material sputtered from a CuPt alloy*. H.H. Andersen, B. Stenum, T. Sørensen and H.J. Whitlow.

13. Thin Solid Films 115(1984)125. *Ion beam mixing of aluminium films on fused SiO₂*. M. Erola, J. Keinonen, H.J. Whitlow, A. Anttila and M. Hautala.
14. Nucl. Instrum. and Method. B5(1984)505. *Thermal- and radiation-stability of hydrogen implanted silicon standards for ion-beam analysis*. H.J. Whitlow, J. Keinonen, M. Hautala, and A. Hautojärvi.
15. Nucl. Instrum. and Method. B6(1985)459. *Angular distribution of particles sputtered from Cu, Pt, and Ge targets by keV ion bombardment*. H.H. Andersen, B. Stenum, T. Sørensen and H.J. Whitlow.
16. Nucl. Instrum. and Method. B6(1985)466. *Momentum and recoil-flux anisotropies in collision-cascades: Influence on sputtered particle angular distributions*. M. Hautala and H.J. Whitlow.
17. Physics Lett. 109A(1985)344. *Range profiles of 25-250 keV hydrogen in silicon*. M. Hautala, J. Keinonen, H.J. Whitlow, P. Tikkanen, M. Uhrmacher and K.P. Lieb.
18. J. Appl. Phys. 58(1985)3248. *Mixing of Al in Si by Ne⁺ ions*. H.J. Whitlow, J. Keinonen and M. Hautala.
19. Nucl. Instrum. and Method. B18(1987)370. *Ballistic collision cascade anisotropies in amorphous, polycrystalline and single-crystal solids*. H.J. Whitlow and M. Hautala.
20. Le Vide Les Couches Minces N° 236(1987)55. *Formation of imbedded CoSi₂ layers by high energy implantation and annealing*. C. Zaring, H. Jiang, M. Östling, H.J. Whitlow and C.S. Petersson.
21. Appl. Phys. Lett. 50(1987)1497. *Fluorine in LPCVD-W/Si contact structures: Inclusion and thermal stability*. H.J. Whitlow, Th. Erikson, M. Östling, C. S. Petersson, J. Keinonen and A. Anttila.
22. Nucl. Instrum. and Meth. B27(1987)448. *Quantitative mass and energy dispersive elastic recoil spectrometry: resolution and efficiency considerations*. H.J. Whitlow, G. Possnert and C. S. Petersson.
23. Semiconductor Science and Technology. 2(1987)625. *Thermal redistribution of fluorine in BF₂⁺ implanted SiO₂/Si Structures*. H.J. Whitlow, J. Keinonen, C. Zaring, and C.S. Petersson.
24. *Redistribution of fluorine from BF₂⁺ implants in MOS structures*. H.J. Whitlow, J. Keinonen, C. Zaring and C.S. Petersson. in: *Solid State Devices*, (eds.) G. Soncini and P.U. Calzolari, (Elsevier, North Holland, 1988)p.417.
25. International Journal of Mass Spectroscopy and Ion Processes 78(1987)329. *Collision cascade parameters for slow particles impinging on biomolecule targets*. H.J. Whitlow, M. Hautala and B.U.R. Sundqvist.
26. Appl. Phys. Lett. 52(1988)1871. *Mass-dispersive recoil spectrometry studied of oxygen and nitrogen redistribution in ion-beam synthesised buried oxy-nitride layers in silicon*. H.J. Whitlow, C.S. Petersson, K.J. Reeson and P.L.F. Hemment.
27. J. Appl. Phys. 65(1989)567. *A quantitative study of oxygen behaviour during CrSi₂ and TiSi₂ formation*. H. Jiang, H.J. Whitlow, M. Östling, E. Niemi, F.M. d'Heurle and C.S. Petersson.
28. Nucl. Instrum. and Methods B36(1989)53. *Thermally grown SiO₂ films as standards for elastic recoil detection analysis*. H.J. Whitlow, A.B.Ch. Andersson and C.S. Petersson.
29. Nucl. Instrum. and Methods B40/41(1989)595. *Ion implantation induced fluorine agglomeration in tungsten disilicide prepared by low-pressure chemical vapour deposition*. C.S. Petersson, H.J. Whitlow, J. Keinonen, F. M. d'Heurle, F.K. Le Goues, Rajiv V. Joshi, Gerald Scilla and O. Thomas.

30. Thin Solid Films 193/194(1990)244, *Lattice diffusion of boron in bulk cobalt disilicide*, C. Zaring, P. Gas, B.G. Svensson, M. Östling, and H.J. Whitlow.
31. Nucl. Instrum. and Methods A310(1991)636, *Mass resolution of recoil fragment detector telescopes for 0.05–0.5 A MeV heavy recoiling fragments*. H.J. Whitlow, B. Jakobsson and L. Westerberg.
32. Mat. res. Soc. Proc. 187(1990)131. *Boron diffusion in bulk cobalt disilicide*. ,P. Gas, C. Zaring, B.G.Svensson, M. Östling, H.J.Whitlow and T. Barge.
33. Nucl. Instrum. and Methods Section–B63(1992)445; *Recoil Spectrometry studies of oil additive associated compositional changes in sliding metal surfaces.*; H. J. Whitlow, E. Johansson, P.A. Ingemarsson and S. Hokmark.
34. Appl. Phys. Lett. 60(1992)219. *High resolution recoil spectrometry for separate characterization of Ga and As in Ga_xAl_(1-x)As structures*. M. Hult, H.J. Whitlow and M. Östling.
35. Nucl. Instrum. and Meth. A317(1992)235. *Measurements of the response function of silicon diode detectors for heavy ions using a time of flight technique*. R. Ghetti, B. Jakobsson and H.J. Whitlow.
36. J. Appl. Phys. 75(1994)835. *Rapid thermal Annealing Induced Reactions of Co/GaAs Thin Film Structures: studies using mass and energy dispersive recoil spectrometry* . M. Hult, H.J. Whitlow, M. Östling, M. Andersson, Y. Andersson, I. Linderberg and K. Ståhl.
37. Nuclear Instrum. and Methods B85(1994)916. *RBS and recoil spectrometry of CoSi₂ formation on GaAs*. M. Hult, H.J. Whitlow, M. Östling, N. Lundberg, C. Zaring, D.D. Cohen, N. Dytlewski, P.N. Johnston and S. R.Walker.
38. Nuclear Instruments and Methods-B85(1994)907. *Mass and energy dispersive recoil spectrometry of Si_xGe_{1-x} grown by electron beam evaporation*, P.N. Johnston, S. R. Walker, I.F. Bubb, D.D. Cohen, N. Dytlewski, M. Hult, H.J. Whitlow, C. Zaring and M. Östling.
39. Nuclear Instrum. and Methods A336(1993)381, *Light output and energy resolution of BGO and GSO scintillators for light ions*, V.V. Aveideichikov, L. Bergholt, M. Guttormsen, J.E. Taylor, L. Westerberg, H.J. Whitlow, Yu. A. Bordenko and S.F. Burachas .
40. Nuclear Instum. and Methods Section-B B89(1994)346 ¹⁵N(¹H,αγ)¹²C *Nuclear resonance broadening measurements of hydrogen incorporation during plasma etching of GaAs and Ga_xIn_(1-x)As quantum wells*. L.Persson, H.J. Whitlow, J. Keinonen, P. Torri, I. Maximov, L. Samulesson, J. Knox and K.G. Malmqvist.
41. Nucl. Instrum and Methods B94(1994)530. *Multivariate analysis method for energy calibration and mass assignment in recoil spectrometry*, M. El Bouanani, H.J. Whitlow, M. Hult, L. Persson, M. Andersson, P.N. Johnston, S. R. Walker, I.F. Bubb, D.D. Cohen, N. Dytlewski, C. Zaring and M. Östling.
42. J. Appl. Phys. 77(1995)2435. *Formation of thin films of CoSi₂ on GaAs*. M. Hult, L. Persson, M. El Bouanani, H.J. Whitlow, M. Andersson, M. Östling, N. Lundberg, C. Zaring, K. Georgsson, D.D. Cohen, N. Dytlewski, P.N. Johnston, S. R. Walker.
43. Nucl. Instrum. and Methods B101(1995)263. *Empirical characterisation of mass distribution broadening in ToF-E recoil spectrometry*, M. Hult, M. El Bouanani, L. Persson, H.J. Whitlow, M. Andersson, C. Zaring, M. Östling, D.D. Cohen, N. Dytewski, I.F. Bubb, P.N. Johnston and S.R. Walker.

44. Vacuum,46(1995)737. *Metal/InP thin film reactions: studies using mass and energy dispersive recoil spectrometry*, H.J. Whitlow, M. Andersson, M. Hult, L. Persson, M. El Bouannani, M. Östling, C. Zaring, N. Lundberg, D.D. Cohen, N. Dytlewski, P.N. Johnston, I.F. Bubb and S. R. Walker.
45. Nucl. Instrum. and Methods, A353(1994)563. *Mass and energy dispersive recoil spectrometry of MOCVD grown $Al_xGa_{(1-x)}As$* . S.R. Walker, P.N. Johnston, I.F. Bubb, W.B. Stannard, D.D. Cohen, N. Dytlewski, M. Hult, H.J. Whitlow, C. Zaring, M. Östling and M. Andersson.
46. Nucl. Instrum. and Methods B94(1994)277. *Materials characterisation using heavy ion time of flight spectrometry*. J.W. Martin, D.D. Cohen, N. Dytlewski, D.B. Garton, H.J. Whitlow and G.J. Russel.
47. Mikrochimica Acta 120(1995)171, *Recoil Spectrometry: Ion accelerator based elemental characterisation of surface layers*. H.J. Whitlow, M. Andersson, M. Hult, L. Persson, M. El Bouanai, M. Östling, C. Zaring, N. Lundberg, D.D. Cohen, N. Dytlewski, P.N. Johnston, I. F. Bubb, S.R. Walker, E. Johannson, S. Hogmark and P. A. Ingemarsson.
48. J. Vac. Sci. Tech. A14(1996)2405. *Recoil spectrometry of thin film reactions in the Pd/InP system*. L. Persson, M. El Bouanani, M. Hult, P. Jönsson, H.J. Whitlow, M. Andersson, K. Georgsson, I.F. Bubb, P.N. Johnston, S. R. Walker, D.D. Cohen, N. Dytlewski C. Zaring and M. Östling.
49. J. Appl. Phys. 80(1996)3346. *Interfacial Reaction Studies of Cr, Ni, Ti and Pt Metallisation on InP*, L.Persson, M. El Bouanani, M. Hult, H.J. Whitlow, M. Andersson, I.F. Bubb, P.N. Johnston, S.R. Walker, D.D. Cohen, N. Dytlewski, C. Zaring and M. Östling.
50. I.E.E.E. Trans. Nucl. Sci. 44(1997)629. *Thin Detectors for the CHICSi ΔE -E telescope* L. Evensen, T. Westgaard, V. Avdeichikov, L. Carlén, B. Jakobsson, Y. Murin, A. Oskarsson, A. Siwek, H.J. Whitlow, E.J. van Veldhuizen, L. Westerberg and M. Guttormsen. H.J. Whitlow and B. Jakobsson
51. Nucl. Instrum. and Methods A 391(1997)492, *Two-dimensional electronic readout system for multi-step-avalanche chambers*, L. Carlén, S. Garpman, H.-Å. Gustafsson, H. Löhner, J. Nystrand, A. Oskarsson, I. Otterlund, T. Svensson, E. Stenlund, K. Söderström and H.J. Whitlow.
52. Microelectronic Engineering 37/38(1997)499, *Formation of thin surface films of Ni-, V- and Co-silicide by low energy implantation with a metal vapour vacuum arc ion source*, Y. Zhang, H.J. Whitlow and T. Zhang.
53. Nuclear Physics A626(1997)439c-446c *CHICSi a 3π detector system for studying heavy ion interactions inside a storage ring*. V. Avdeichikov, L. Carlén, M. Guttormsen, A. Fokin, B. Jakobsson, J. Mårtensson, A. Oskarsson, E.J. van Veldhuizen, L. Westerberg and H.J. Whitlow for the CHIC Collaboration.
54. Nucl. Instrum. and Methods B 135(1998)392, *Foreign atom incorporation during metal silicide formation by ion beam synthesis*, Y. Zhang, H.J. Whitlow and T. Zhang
55. Nucl. Instrum and Methods. Section B 135 (1998)523. *Effects of energy deposition by nuclear scattering in silicon p-i-n diode detectors*. H.J. Whitlow, S. J. Roosendaal, M. El Bouanani, R. Ghetti, P.N. Johnston, B. Jakobsson, R. Hellborg, H. Petersson, P. Omling, Z. Wang and the CHIC collaboration.
56. Nucl. Instrum. and Methods B136-138(1998)616, *Extremely thin Si ΔE detectors for ion beam analysis*, H.J. Whitlow, T. Winzell and G. Thungström.
57. Nucl. Instrum. and Methods B136-138(1998)719, *Recoil Spectrometry Studies of thin film reactions in the Si/Pd/GaAs and Si/Pd/ $Al_xGa_{(1-x)}As$ systems* Y. Zhang, M. Hult, M., L. Persson, H.J. Whitlow,

- M. El Bouanani, M. Andersson, I.F. Bubb, P.N. Johnston, S.R. Walker, D.D. Cohen, N. Dytlewski, C. Zaring and M. Östling.
58. Phys. Rev. Lett. 78(1997)3828, *Gross and fine structure of pion production excitation functions in p-nucleus and nucleus-nucleus reactions*. B. Jakobsson, M. Berg, L. Carlén, R. Elmér, A. Fokin, R. Ghetti, J. Mårtensson, B. Norén, A. Oskarsson, H.J. Whitlow, C. Ekström, G. Ericsson, J. Romanski, E.J. van Veildhuizen, L. Westerberg, J. Julien, Ö. Skeppstedt, N. Nybø, T.F. Thorsteinsen, S. Amirelmi, M. Guttormsen, G. Løvhøiden, V. Bellini, F. Palazzolo, M.L. Sperduto, J.P. Bondorf, I. Mishustin, V. Avdeichikov, O.Z. Lozhkin, Yu. Murin (CHIC collaboration)
 59. Nucl. Instrum. And Methods-Section B 159(1999)101. *The Response and Calibration of Thin Si ΔE Detectors* Y. Zhang, T. Winzell and H.J. Whitlow.
 60. Nucl. Instrum. And Methods-Section B 150(1999)548, *Characterisation of ferromagnetic magnetic storage media surfaces by complementary Particle Induced X-ray Analysis and Time of Flight-Energy Dispersive Elastic Recoil Detection Analysis*, Y. Zhang, M. Elfman, T. Winzell and H.J. Whitlow
 61. Nucl. Instrum. and Methods-Section B 159 (1999)142. *High-dose Co implantation in Si, SiO₂/Si and Si₃N₄/Si Part I: Formation of thin silicide surface films*, Y. Zhang, T. Winzell, T. Zhang, I.A. Maximov, E.-L. Sarwe, M. Graczyk, L. Montelius and H.J. Whitlow.
 62. Nucl. Instrum. and Methods-Section B 159(1999)133. *High-dose Co implantation in Si, SiO₂/Si and Si₃N₄/Si Part II: Sputtering yield transients, the approach to high dose equilibrium*, Y. Zhang, T. Winzell, T. Zhang, I.A. Maximov, E.-L. Sarwe, M. Graczyk, L. Montelius and H.J. Whitlow.
 63. Nucl. Instrum. and Methods-Section B 159(1999)158. *High-dose Co implantation in Si, SiO₂/Si and Si₃N₄/Si Part III: Heavy-dose Co bombardment induced surface topography development*, Y. Zhang, T. Winzell, T. Zhang, I.A. Maximov, E.-L. Sarwe, M. Graczyk, L. Montelius and H.J. Whitlow.
 64. Nucl. Instrum. and Methods B 161-163(2000)584, *Studies of electrochemical oxidation of Zircaloy reactor fuel cladding using Time-of-Flight-Energy Elastic Recoil Detection Analysis*. H.J. Whitlow, Y. Zhang, Y. Wang, T. Winzell, N. Simic, E. Ahlberg, M. Limbäck and G. Wikmark.
 65. Nucl. Instrum. and Methods B. 164-165(2000)186. *Correlation of energy-loss and collected charge in Si ΔE detectors: measurements using an Enge spectrometer*, H.J. Whitlow, Y. Zhang, H. Timmers, T.R. Ophel, R.G. Elliman, M. Li and D.J. O'Connor.
 66. Nucl. Instrum. and Methods B161-163(2000)558, *Analysis of ferromagnetic archiving media ageing by time of flight-energy elastic recoil detection analysis*, H.J. Whitlow, Y. Zhang and T. Winzell.
 67. Nucl. Instrum and Methods B 161-163(2000)297, *Influence of heavy ion irradiation damage on Si charged particle detector calibration*. Y. Zhang, T. Winzell and H.J. Whitlow.
 68. Nucl. Instruments and Methods B 161-163(2000)281. *Application Specific Integrated Circuit (ASIC) Readout Technologies for Future Ion Beam Analytical Instruments* H. J. Whitlow.
 69. Phys. Rev. C 62(2000)14610. *Pion production excitation functions in proton-nucleus collisions from absolute threshold to 500 MeV*. J. Mårtensson, M. Berg, L. Carlén, R. Elmér, A. Fokin, R. Ghetti, B. Jakobsson, B. Norén, A. Oskarsson, H.J. Whitlow, C. Ekström, G. Ericsson, J. Romanski, E.J. van Veldhuizen, L. Wetsberg, J. Juilien, K. Nybø, T.F. Thorsteinsen, S. Amirelmi, M. Guttormsen, G. Løvhøiden, V. Bellini, F. Palazzolo, M.L. Sperduto, C. Sutura, V. Avdeichikov, A. Kuznetsov, Yu. Murin. (CHIC Collaboration)
 70. Nucl. Instr. and Methods 452(2000)525. *A compact Ultra-High Vacuum (UHV) compatible instrument for time of flight-energy measurements of slow heavy reaction products from*

- intermediate energy nuclear reactions*, A.V. Kuznetsov, E.J. van Veldhuizen, L. Westerberg, V.G. Lyapin, K. Aleklett, W. Loveland, J. Bondorf, B. Jakobsson and H.J. Whitlow.
71. Nucl. Instrum. and Methods B179(2001)403., *Separation of Mass-Overlapped Recoil Spectrometry Data using Ryan and Jamieson's Dynamic Analysis Method*. L. Persson, H.J. Whitlow, M. El Bouanani, M. Andersson, I.F. Bubb, D.D. Cohen, N. Dytlewski, M. Hult, P.N. Johnston, S.R. Walker, C. Zaring and M. Östling.
 72. Nucl. Instr. Meth. B 173(2001)447. *Scanning probe microscopy characterisation of masked low energy implanted nanometer structures*. T. Winzell, S. Anand, I. Maximov, E.-L. Sarwe, M. Graczyk, L. Montelius, H. J. Whitlow.
 73. Nucl. Instr. Meth. B173(2001)427. *Sputtering transients for some transition elements during high-fluence MEVVA implantation of Si*. Y. Zhang, T. Zhang, Z. Xiao, H. J. Whitlow.
 74. Nucl. Instr. and Methods B183(2001)34. *Measurements of the mean energy-loss of swift heavy ions in carbon with high precision*. Y. Zhang, T. Winzell and H.J. Whitlow
 75. Nucl. Instr. Meth B175-177(2001)737. *Annealing of Low Resistivity Co-silicides formed by MEVVA Implantation into SiO₂/Si and Si₃N₄/Si Structures* Y. Zhang, D.-T. Lu, T. Zhang, I. A. Maximov, E.-L. Sarwe, M. Graczyk, H. J. Whitlow.
 76. Instrum. Meth. B179(2001)121 *Scanning μ -RBS characterisation of local loading effects of non-selectively epitaxially grown SiGe thin films*. T. Winzell, J. Pejnefors, M. Elfman, M. Östling and H. J. Whitlow.
 77. Jap. J. Appl. Phys. 40(2001)629.. *Characterisation of Compact Discs using Time of Flight-Energy Elastic Recoil Detection Analysis*. Y. Zhang, G. Possnert, L. Jonsson, T. Winzell, H. J. Whitlow.
 78. Semicond. Sci. Technol.16(2001)889. *Band gap modification in GaInAs/InP quantum well structures using switched ion channelling lithography*. T. Winzell, I. Maximov, L. Landin, Y. Zhang, A. Gustafsson, L. Samuelsson, H.J. Whitlow.
 79. Nucl. Instrum. Meth. B 190(2002)375 *Fundamental effects and non-linear Si detector response*, Harry J. Whitlow, and Yanwen Zhang.
 80. Nucl. Instr. Meth. B 190 (2002) 383, *Response of Si p-i-n diode and Au/n-Si surface barrier detectors to heavy ions*, Y. Zhang, H. J. Whitlow.
 81. Nucl. Instr. Meth. B 190(2002)84, *Measurements of Si stopping in amorphous silicon*. H. J. Whitlow, H. Timmers, R.G. Elliman, T. Weijers, Y. Zhang and D. J. O'Connor.
 82. Nucl. Instr. Methods B 190(2002)428. *Threshold Stoichiometry for Beam Induced Nitrogen Depletion of SiN*. H. Timmers, T.D.M. Weijers, R.G. Elliman, J. Uribasterra, H.J. Whitlow, E.-L. Sarwe.
 83. Nucl. Instr. Meth. B.195(2002)133. *Measurement and uncertainties of energy loss in silicon over a wide Z₁ range using Time of Flight detector telescopes*, H. J. Whitlow, H. Timmers, R.G. Elliman, T. Weijers, Y. Zhang and D. J. O'Connor.
 84. Health Physics 84(2003)72, *Computer simulation and experimental studies of ²¹⁰Po in glass resulting from radon exposure*. B. Roos and H.J. Whitlow.
 85. Physica Scripta T104(2003)73, *The CHICSI Project at the CELSIUS Ring*, B. Jakobsson for the CHICSi Development Group (V. Avdeichikov, P. Golubev, B. Jakobsson, A. Siwek, E. J. van Veldhuizen, L. Westerberg, H. J. Whitlow)

86. Nucl. Instr. Meth A 500 (2003) 84. *CHICSi – a compact ultra-high vacuum compatible detector system for nuclear reaction studies at storage rings. I General structure, mechanics and UHV compatibility.* L. Westerberg, V. Aveichikov, L. Carlén, P. Golubev, B. Jakobsson, C. Rouki, A. Siwek, E. J. van Veldhuizen, H.J. Whitlow. (CHIC collaboration)
87. Nucl. Instr. Meth. A 500 (2003) 96, *CHICSi – a compact ultra-high vacuum compatible detector system for nuclear reaction studies at storage rings II Detectors.* P. Golubev, V. Avdeichikov, L. Carlén, B. Jakobsson, A. Siwek, E.J. van Veldhuizen, L. Westerberg, H.J. Whitlow (CHIC collaboration).
88. H. J. Whitlow, M. L. Ng, V. Auželytė, I. A. Maximov, J. A. van Kan, A. Bettiol and F. Watt *Lithography of high spatial-density biosensor structures with sub-100 nm spacing by MeV proton beam writing with a minimal proximity effect.* Nanotechnology 15 (2004) 223.
89. Nucl. Instrum. Meth B 215(2004)48, Y. Zhang, W. J. Weber and H. J. Whitlow, *Electronic stopping powers for heavy ions in silicon.*
90. Nucl. Instrum Meth. A 516(2004)327. *CHICSi – a compact ultra-high vacuum compatible detector system for nuclear reaction experiments at storage rings.III. Readout system,* L. Carlén, V. Avdeichikov, G. Førre, P. Golubev, B. Jakobsson, P. Marciniowski, A. Siwek, E. J. van Veldhuizen, L. Westerberg, H. J. Whitlow, J. M. Østby.
91. Nucl. Instrum. Meth.-B 219–220 (2004) 263. *Energy loss measurements for mass-14 ions using a patterned stopping medium on a PIN diode.* H. Timmers, K. Stenström, M. Graczyk and H. J. Whitlow, Nucl. Instrum. Meth.-B 219–220 (2004) 263.
92. Nucl. Instrum. Meth. B 232(2005)322. *Crystallographic analysis of extended defects in diamond-type crystals,* S. T. Nakagawa, K. Ikuse, T. Ono, H. J. Whitlow, and G. Betz
93. Nuclear Instrum. Methods B 242(2006)602. *Formation of silicide films by ion beam deposition.* Y. Zhang, D.E. McCready, C.M. Wang, J. Young, M.I. McKinley, W.J. Weber, H.J. Whitlow, A. Razpet, G. Possnert, T. Zhang, Y. Wu,
94. Nucl.Instrum. Methods B247(2006)271. *Formation of cobalt silicide from filter metal vacuum arc deposited films,* H.J. Whitlow, Y. Zhang, C.M. Wang, D.E. McCready, T. Zhang, Y. Wu,
95. Nucl. Instrum. Meth. B 249 (2006)532. *Synthesis and characterisation of cobalt silicide films on silicon.* C.T. Joensson, I.A. Maximov, H.J. Whitlow, V. Shutthanandan, L. Saraf, D.E. McCready, B.W. Arey, Y. Zhang and S. Thevuthasan
96. Nucl. Instrum. And Meth. B 249(2006)544. *Retention of Pb isotopes in glass surfaces for retrospective assessment of radon exposure.* J. Ekman , J. Helgesson, L. B. Karlsson, M. Mohsenpour, I. Riihimäki, V. Touboltsev, P. Jalkanen, A. Virtanen, H. Kettunen, J. Huikari, A. Nieminen, I. Moore, H. Penttilä, K. Arstila, J. Äystö, J. Räisänen, H. J. Whitlow.
97. Nucl. Instrum. Meth. B 251 (2006) 352. *Measurements of the stopping forces for heavy ions in Ge, Ag and Au using novel 'polka-dot' detectors.* T.D.M. Weijers-Dall, H. Timmers, K. Stenström, P. Persson, A. Pergjegaj, X. Wang, M. Graczyk, T. Osipowicz, M.Q. Ren, D.J. O'Connor, and H.J. Whitlow
98. J. of Nuclear Materials 363-365 (2007) 1289. *Dissociation mechanism of cluster ions resolved using ab initio molecular orbital calculations.* I. Suzue, M. Itoh, M. Kageyama, Y. Mizuno, H.J. Whitlow and S.T. Nakagawa,

99. Nucl. Instrum. Methods B 260 (2007) 468. *Low-energy primary knock on atom damage distributions near MeV proton beams focused to nanometre dimensions*, H.J. Whitlow and S.T. Nakagawa
100. Nucl. Instrum. Methods B 260 (2007)130. *Growth of bone-cells on lithographically modified surfaces*. S. Gorelick, P. Rahkila, A. Sagari A.R., T. Sajavaara, S. Cheng, L. B. Karlsson , J. A. van Kan , H. J. Whitlow
101. Nucl. Instrum. Methods B 260 (2007) 28., *Exploratory nuclear microprobe data visualisation using 3- and 4-dimensional biological volume rendering tools*, H. J. Whitlow, M. Ren, J. A. van Kan, F. Watt, D. White.
102. Nuclear Instrum. Methods B 260(2007)124. *Nano-imaging of single cells using STIM*, M. Ren, J.A van Kan, A..A. Bettioli, Lim D., Chan Y. G., Bay. B. H., H.J. Whitlow, T Osipowicz, F. Watt.
103. Nucl. Instrum. Meth B 260 (2007) 77. *Development of a MeV ion beam lithography system in Jyväskylä*. S. Gorelick, T. Ylimäki, T. Sajavaara, M. Laitinen, A. Sagari A.R., H. J. Whitlow.
104. Appl. Phys. Lett. 91 (2007) 094105. *Radiation detector resolution measurements over a continuous energy range*, Y. Zhang, B.D. Milbrath, W. J. Weber and H.J. Whitlow.
105. IEEE trans. Nucl. Sci. 54 (2007)1158) *Linear Energy Transfer of Heavy Ions in Silicon*, A. Javanainen, T. Malkiewicz, J. Perkowski, W.H. Trzaska, G. Berger, W. Hajdas, R. Harboe-Sørensen, H. Kettunen, V. Lyapin, M. Mutterer, A. Pirojenk1, I. Riihimäki, T. Sajavaara, G. Tyurin, H.J. Whitlow, A. Virtanen.
- 106.** A. Sagari A.R, C. Lautaret, S. Gorelick, P. Rahkila, M. Putkonen , K. Arstila, T. Sajavaara, S. Cheng, H. J. Whitlow, *Ion-sputtering deposition of Ca-P-O films for microscopic imaging of osteoblast cells* Nucl. Instrum. Methods B 216 (2007)719.
107. S.T. Nakagawa, G. Betz and H.J. Whitlow *Detection of planar defects caused by ion irradiation in Si using molecular dynamics*, Surface and Coatings Technology 201(2007)8393.
108. Suzue, M. Itoh, M. Kageyama, Y. Mizuno, H.J. Whitlow and S.T. Nakagawa, *Dissociation mechanism of cluster ions resolved using ab initio molecular orbital calculations*. J. of Nuclear Materials 363-365 (2007) 1289.
109. M. Ren, H. J. Whitlow, A. Sagari A.R., J. A. van Kan, T. Osipowicz, and F. Watt, *Figures of merit for focusing MeV ion beams in biomedical imaging and proton beam writing*. J. Appl. Phys **103**, (2008) 014902.
110. S. Gorelick , N. Puttaraksa, T. Sajavaara, S. Singkarat, H. J. Whitlow, *Microfluidic device fabrication using MeV ion beam Programmable Proximity Aperture Lithography (PPAL)*. Nucl. Instrum. Methods. B 266(2008)2461
111. A. Sagari A.R, P. Rahkila, M. Väisänen, R. Lehto, T. Sajavaara, S. Gorelick, M. Laitinen, M. Putkonen, S. Sangyuenyongpipat, J. Timonen, S. Cheng, H. J. Whitlow, *Wettability and compositional analysis of hydroxyapatite films modified by low and high energy ion irradiation*, Nucl. Instrum. And Meth. B 266(2008)2515.
112. M. Laitinen , I. Riihimäki, J. Ekman, A. R. A. Sagari, L. B. Karlsson , S. Sangyuenyongpipat, S. Gorelick, H. Kettunen, H Penttilä, R Hellborg, T Sajavaara, H. J. Whitlow. *Mobility determination of lead isotopes in glass for retrospective radon measurements*, Radiation Protection Dosimetry (2008) doi:10.1093/rpd/ncn162

113. N. Puttaraksa, S. Gorelick, T. Sajavaara, M. Laitinen, S. Singkarat, and H. J. Whitlow, *Programmable proximity aperture lithography with MeV ion beams*. J. Vac. Sci. Tech. B 26(2008)1732.
114. M. Putkonen, T. Sajavaara, H. J. Whitlow, P. Rahkila, L. Xu, S. Cheng, L.Niinistö *Deposition and characterization of biocompatible hydroxyapatite thin films by atomic layer deposition* Thin Solid films Thin Solid Films 517 (2009) 5819.
115. H. J. Whitlow, M. Ren, J. A. van Kan, T. Osipowicz, F. Watt , *Characterisation of Beam Focus Quality in Biomedical Nuclear Microscopy*, Nucl. Instrum. Methods B 267(2009)2149.
116. S. Sangyuenyongpipat , V. Marjomäki, S. Ikonen, T. Sajavaara A. Sagari A.R., S. Gorelick, M. Laitinen, L.P. Wang, H. J. Whitlow, *Development of micro-contact printing of osteosarcoma cells using MeV ion beam lithography*, Nucl. Instrum. Meth. B 267(2008)2306.
117. H. J. Whitlow, M. Ren, J. A. van Kan T. Osipowicz, F. Watt, *Angular and Lateral Spreading of Ion Beams in Biomedical Nuclear Microscopy*, Nucl. Instrum. Methods. Nucl. Instrum. Meth. B 267(2009)2153.
118. S. Gorelick, T. Sajavaara and H.J. Whitlow, *Aperture edge scattering in MeV ion beam lithography and nuclear microscopy: an application for the GEANT4 toolkit*, Nucl. Instrum. Methods. 267(2009)2050.
119. S. Gorelick, T. Sajavaara and H.J. Whitlow, *Aperture edge scattering in MeV ion beam lithography. Part I: scattering from a Ta aperture edge*. J. Vac. Sci Tech. B. B 27 (2009) 1102.
120. S. Gorelick, T. Sajavaara and H.J. Whitlow, *Aperture edge scattering in MeV ion beam lithography. Part II: scattering from a rectangular aperture..* J. Vac. Sci Tech. B. B 27 (2009) 1109.
121. S. Gorelick, Z. Fang, J.A. van Kan, H.J. Whitlow, F. Watt, *Adhesion of proton beam written high aspect ratio Hydrogen Sisequioxane (HSQ) nanostructures on different metallic substrates*. Nucl. Instrum. Methods B 267(2009)3314.
122. S. Gorelick, Z. Fang, P. G. Shao, J.A. van Kan, H.J. Whitlow, F. Watt, *Ni electroplating of proton beam machined HSQ resist*. Nucl. Instrum. Methods B 267(2009)2309.
123. H.J. Whitlow, L.P. Wang and L. Gilbert, *Transport of water and particles in microfluidics devices lithographically fabricated using proton beam writing (PBW)*, Advanced Materials Research 74(2009)129.
124. A. Javanainen, M. Sillanpää, W. H. Trzaska, A. Virtanen, G. Berger, W. Hajdas, R. Harboe-Sørensen, H. Kettunen, T. Malkiewicz, M. Mutterer, J. Perkowski, A. Pirojenko, I. Riihimäki, T. Sajavaara, G. Tyurin, and H. J. Whitlow. *Experimental Linear Energy Transfer of Heavy Ions in Silicon for RADEF Cocktail Species*, IEEE Trans. Nucl. Sci. 56(2009)2242
125. S.T. Nagakawa, H.J. Whitlow *A predictive model for the electronic stopping force for molecular dynamic simulation (I)*, Nucl. Instr. and Meth. B 268 (2010) 3287.
126. N. Puttaraksa, M. Napari, O. Chienthavorn, R. Norarat, T. Sajavaara. M. Laitinen, S. Singkarat, H. J Whitlow, *Direct writing of channels for microfluidics in silica by MeV ion beam lithography*, Adv. Mat. Res. 254 (2011) pp 132-135, doi:10.4028/www.scientific.net/AMR.254.132
127. M. Laitinen, T. Sajavaara, M. Rossi, J. Julin, R.L. Puurunen, T. Suni, T. Ishida, H. Fujita, K. Arstila, B. Brijs, H.J. Whitlow, *Depth profiling of Al₂O₃ + TiO₂ nanolaminates by means of a time-of-flight energy spectrometer* Nucl. Instrum. Meth B 269 (2011) 3021–3024,

- doi:10.1016/j.nimb.2011.04.074
128. R. Hellborg and H.J. Whitlow, *Direct Current Accelerators for Industrial Applications*, Reviews of Accelerator Science and Technology, 4 (2011) 187–216. DOI: 10.1142/S1793626811000525
 129. H.J. Whitlow and S. T. Nakagawa, *Ordering effects in high-resolution depth profiling with MeV ion beams*. Nucl. Instrum. and Methods B 272(2012) 430-432. doi:10.1016/j.nimb.2011.01.116
 130. S Unai, N. Puttaraksa, N. Pussadee, K. Singkarat, M. W. Rhodes, H. J. Whitlow and S. Singkarat, *Influence of MeV H⁺ ion beam flux on cross-linking and blister formation in PMMA resist*, Maejo Int. J. Sci. Technol. 6(2012) 70-76, <http://www.mijst.mju.ac.th/vol6/70-76.pdf>
 131. R. Norarat, T. Sajavaara, M. Laitinen, P. Heikkinen, K. Ranttila, K. Ylikorkala, V. Hänninen, M. Rossi, P. Jones, V. Marjomäki, L. Gilbert and H. J. Whitlow, “*Development of the Jyväskylä microbeam facility*”, Nucl. Instr. and Meth. B, doi : 10.1016/j.nimb.2011.01.055. (In press)
 132. N. Puttaraksa, R. Norarat, M. Laitinen, T. Sajavaara, H. J. Whitlow, S. Singkarat, *Lithography exposure characteristics of poly(methyl methacrylate) (PMMA) for carbon, helium and hydrogen ions*, Nucl. Instrum Methods B 272 (2012) 162-164 doi: 10.1016/j.nimb.2011.01.056. (In press).
 133. J. Räsänen, H.J. Whitlow, *Diffusion studies with radioactive ions*, Hyperfine Interactions (2013) DOI 10.1007/s10751-012-0622-7
 134. H. J Whitlow, R. Norarat, M.Q. Ren, T. Osipowicz, J.A. van Kan, J. Timonen, F. Watt, *Objective improvement of the visual quality of Nuclear Microscope (NM) images*, Microelectronic Engineering 102 (2013) 6–8, doi:10.1016/j.mee.2012.02.010
 135. H. Kivistö, M. Rossi, P. Rahkila, P. Jones, R. Norarat, N. Puttaraksa, T. Sajavaara, M. Laitinen, V. Hänninen, K. Ranttila, P. Heikkinen, L. Gilbert, V. Marjomäki H. J Whitlow, *Advanced time-stamped total data acquisition control front-end for MeV ion beam microscopy and proton beam writing*, Microelectronic Engineering 102(2013)9. <http://dx.doi.org/10.1016/j.mee.2012.02.011>
 136. R. Norarat, N. Puttaraksa, Mari Napari, T. Sajavaara, H. J Whitlow, *Why are hydrogen ions best for proton beam writing?*, Microelectronic Engineering 102 (2013) 22–24, <http://dx.doi.org/10.1016/j.mee.2012.02.012>
 137. S. Unai, N. Puttaraksa, N. Pussadee, K. Singkarat, M.W. Rhodes, H.J. Whitlow, S. Singkarat, *Fast and blister-free conditions for crosslinking of PMMA induced by 2 MeV protons*, Microelectronic Engineering. 102 (2013) 18–21, <http://dx.doi.org/10.1016/j.mee.2012.05.010>
 138. N. Puttaraksa, S. Unai, M.W. Rhodes, K. Singkarat, H.J. Whitlow, S. Singkarat, *Fabrication of a negative PMMA master mould for soft-lithography by MeV ion beam lithography*, Nucl. Instrum Methods B 272(2012)149. <http://dx.doi.org/10.1016/j.nimb.2011.01.053>
 139. A.R.A. Sagari, J. Malm, M. Laitinen, P. Rahkila, M. Hongqiang, M. Putkonen, M. Karppinen, H.J. Whitlow, T. Sajavaara. *Influence of titanium-Substrate roughness on Ca-P-O thin films grown by atomic layer deposition*. Thin Solid Films 531(2013)26. <http://dx.doi.org/10.1016/j.tsf.2012.11.137>
 140. R. Norarat, V. Marjomäki, X. Chen, M. Zhaohong, R. Minqin, C. Chen, A.A. Bettiol, H.J. Whitlow, F. Watt, *Ion-induced fluorescence imaging of endosomes*, Nucl. Instrum. Methods B 306(2013)113. <http://dx.doi.org/10.1016/j.nimb.2012.12.052> .
 141. H.J. Whitlow, S. Gorelick, N. Puttaraksa, M. Napari, M. Hokkanen, R. Norarat, *Development of procedures for programmable proximity aperture lithography*. Nucl. Instrum. Methods B 306((2013) 307. <http://dx.doi.org/10.1016/j.nimb.2012.11.046>

142. S. Brun, V. Savu, S. Schintke, E. Guibert, H. Keppner, J. Brugger, H. J. Whitlow, *Application of Stencil Masks for Ion Beam Lithographic Patterning*, Nucl. Instrum. Methods B 306(2013)292. <http://dx.doi.org/10.1016/j.nimb.2012.12.064>
143. H.J. Whitlow, Minqin Ren, Xiao Chen, Thomas Osipowicz, Jeroen A. van Kan, Frank Watt, *Angular spreading measurements using MeV ion microscopes*, Nucl. Instrum. Methods B 306(2013)311. <http://dx.doi.org/10.1016/j.nimb.2012.11.035>
144. L. Rojas, R. Norarat, M. Napari, H. Kivistö, O. Chienthavorn, H.J. Whitlow, *Lithographic fabrication of soda-lime glass based microfluidics*, Nucl. Instrum. Methods B 306(2013)296. <http://dx.doi.org/10.1016/j.nimb.2012.12.047>
145. N. Puttaraksa, M. Napari, L. Mariläinen, L. Gilbert, T. Sajavaara and H.J. Whitlow *Fast prototyping microfluidic fabrication by programmable proximity aperture MeV ion beam lithography*, Nucl. Instrum. Methods B 306 (2013) 302. <http://dx.doi.org/10.1016/j.nimb.2012.12.033>
146. C. Vockenhuber, J. Jensen, J. Julin, H. Kettunen, M. Laitinen, M. Rossi, T. Sajavaara, O. Osmani, A. Schinner, P. Sigmund, and H. J. Whitlow; *Energy-Loss Straggling of MeV Kr ions in Gases*, Eur. Phys. J.D. 67 (2013) 145. <http://dx.doi.org/10.1140/epjd/e2013-40095-4>
147. S.T. Nakagawa, T. Murakami, M. Nomura, H. Kanda, E. Sukegai, H.J. Whitlow; *How can we monitor the recovery of a damage crystal by the post anneal?*, *IEEJ Transactions on Electronics, Information and Systems Vol. 134 (2014) No. 4 P 479-483* <http://doi.org/10.1541/ieejieiss.134.479>
148. R. Norarat, E. Guibert, P. Jeanneret, J. Jenni, A. Roux, L. Stoppini, H. J. Whitlow, *A compact gas ionisation direct-STIM detector for MeV ion microscopy* Nuclear Instr. Methods B 348(2015)58-61. <http://dx.doi.org/10.1016/j.nimb.2014.12.074>
149. A. Paone, R. Sanjines, P. Jeanneret, H. J. Whitlow, E. Guibert, G. Guibert, F. Bussy, J.-L. Scartezzini, A. Schüler. *Influence of doping in thermochromic $V_{1-x}W_xO_2$ and $V_{1-x}Al_xO_2$ thin films: twice improved doping efficiency in $V_{1-x}W_xO_2$* . J. Alloys and Compounds 621(2015)206-211. [doi:10.1016/j.jallcom.2014.08.264](https://doi.org/10.1016/j.jallcom.2014.08.264)
150. R. Norarat and H.J. Whitlow, *Resolution intercomparison in microscopy and lithography using light and ion beam imaging*, Nuclear Instr. Methods B. B 348(2015)53-57. <http://dx.doi.org/10.1016/j.nimb.2015.01.030>
151. A. Homsey, E. Laux, J. Brossard, H.J. Whitlow, M. Roccio, S. Hahnwald, P. Senn, P. Mistrik, R. Hessler, T. Melchionnia, C. Frick, H.Löwenheim, M. Müller, U. Wank, K.-H. Wiesmüller, H. Keppner, *Fine control of drug delivery for cochlear implant applications. Hearing, Balance and Communication*, Early Online: 1-7, [doi:10.3109/21695717.2015.1048082](https://doi.org/10.3109/21695717.2015.1048082)
152. H. J. Whitlow, R. Norarat, M. Roccio, P. Jeanneret, E. Guibert, M. Bergamin, G. Fiorucci, A. Homsy, E. Laux, H. Keppner, P. Senn., *MeV ion beam lithography of bicompatible halogenated Parylenes using aperture masks*. Nuclear Instr. Methods B 354(2015) 34–36, [doi:10.1016/j.nimb.2014.10.024](https://doi.org/10.1016/j.nimb.2014.10.024).
153. H.J. Whitlow, *System on Chip (SoC) microcontrollers (μC) as low-cost digitisers for ion beam analysis (IBA) instruments*. Nucl. Instrum. Methods B. B 383 (2016) 245–249 <http://dx.doi.org/10.1016/j.nimb.2016.05.033>
154. W. Insuan, P. Khawmodjod, H. J. Whitlow, P. Soonthondecha, F. Malem, O. Chienthavorn; *High throughput and low cost analysis of trace volatile phthalates in seafood by online coupling of monolithic capillary adsorbent with GC-MS*., J. Agric. Food Chem., 64(2016), 64 (16)3287–3292. DOI: [10.1021/acs.jafc.6b00742](https://doi.org/10.1021/acs.jafc.6b00742)

155. N. Puttaraksa, H.J. Whitlow, M. Napari, L. Meriläinen, L. Guibert; *Development of a microfluidic design for an automatic lab-on-chip-operation* Microfluid Nanofluid 20(2016)141-152, DOI [10.1007/s10404-016-1808-0](https://doi.org/10.1007/s10404-016-1808-0)
156. C. Vockenhuber, K. Arstila, J. Jensen, J. Julin, H. Kettunen, M. Laitinen, M. Rossi, T. Sajavaara, M. Thöni, H. J. Whitlow; *Energy loss and straggling of MeV Si ions in gases*; Nucl. Instrum. Methods B391(2017)20. <http://dx.doi.org/10.1016/j.nimb.2016.11.030>
157. Rattanaporn Norarat, Karuna Jainontee, Wanlapaporn Thianthaisong, Sukonlaphat Sriwang, Hideki Nakajima, Orapin Chienthavorn, Edouard Guibert, Harry J Whitlow; *MeV ion exposure behaviour of PMMA resist polymer studied by synchrotron light spectroscopies*, Nucl. Instrum. Methods. B 404 (2017) 238–242; <http://dx.doi.org/10.1016/j.nimb.2017.01.061>
158. Liping Wang, Clemens Meyer; Edouard Guibert; Alexandra Homsy; Harry J Whitlow; *Fabrication of high-transmission microporous membranes by proton beam writing-based molding technique*, Nucl. Instrum. Methods. B 404 (2017) 224–227; <http://dx.doi.org/10.1016/j.nimb.2017.04.069>
159. Ridthee Meesat Wanwisa Sudprasert, Edouard Guibert, Liping Wang, Thibault Chappuis, Harry J. Whitlow; *Micro-PIXE study of metal loss from dental amalgam*, Nucl. Instrum. Methods. B 404 (2017) 106–109; <http://dx.doi.org/10.1016/j.nimb.2017.01.024>
160. Luc Stoppini, Harry J Whitlow, Edouard Guibert; Patrick Jeanneret; Alexandra Homsy; Joy Roth; Sven Krause; Adrien Roux; *Post-focus expansion of ion beams for low fluence and large area MeV ion irradiation: scaling from the single-event to the system level in human brain tissue and electronics devices*. Nucl. Instrum. Methods. B 404 (2017) 87–91. <http://dx.doi.org/10.1016/j.nimb.2017.01.054>
161. Anna Krammer, Arnaud Magrez, Wolfgang A. Vitale, Piotr Mocny, Patrick Jeanneret, Edouard Guibert, Harry J. Whitlow, Adrian M. Ionescu, and Andreas Schüler; *Elevated transition temperature in Ge doped VO₂ thin films*; Journal of Applied Physics 122, (2017) 045304; <http://dx.doi.org/10.1063/1.4995965>

In preparation and submitted

162. Syed F. Naeem, Dina Chernikova, Kåre Axell, Liping Wang, Edouard Guibert, Harry J. Whitlow; *Radiological safety considerations associated with MeV ion micro- and nanobeam apertures*; Nucl. Instrum. Methods. B. (In preparation)
163. Wanwisa Sudpraserta, Ridthee Meesat, Thitiwoot Chaisawatarae, Siradech Surit, Parames Kamhangrittirong, Harry J. Whitlow; *Design of the new Accelerator Centre Building at Kasetsart University*; (In preparation)
164. Harry J. Whitlow, Liping Wang, Edouard Guibert, Christian Degriigny; *Longitudinal and other investigations of minor elements in early aluminum artefacts*; Nucl. Instrum. Methods B. (Submitted)
165. Harry J. Whitlow, Edouard Guibert, Liping Wang, Mathijs Van Der Meer, Patrick Jeanneret; *Time detector design for Time-of-Flight Elastic Recoil Detection Analysis (ToF-E ERDA) revisited*; Nucl. Instrum. Methods B. (Submitted)
166. J. Dias, Harry J. Whitlow, A. deVera, N. Deoli, K. M. Smith D. Rogers, R. Broussard; *A BSL-2 level ion beam facility for analysis of the effects of MeV ions on biological cells*; Nucl. Instrum. Methods B. (Submitted)
167. Wanwisa Sudprasert, Ridthee Meesat, Harry J. Whitlow, Henry Udeogu, Armin B De Vera and

- Nareash Deoli; *Investigation of mercury pathways from dental amalgam by micro-PIXE*; Nucl. Instrum. Methods B. (Submitted).
168. Harry J. Whitlow, Henry Udegou, Jace Conerly, Nareash Deoli, Armin deVera, Son Q. Do, William Holmes; *MicroPIXE studies of catalyst scavengers for desulphurisation of natural gas*; (In manuscript)
169. Wanwisa Sudprasert, Ridthee Meesat, Armin deVera and Harry J. Whitlow; *Characteristics of focus conditions for a magnetic quadrupole triplet lens*; (In manuscript)
170. Harry J. Whitlow, Sanjana Banerjee, Henry Udegou, Nareash Deoli, Armin deVera, Paul L. Klerks; *Can we use the invasive Apple Snail Pomacea maculata for biomonitoring of lead contamination in freshwater wetlands?* (in manuscript).
171. Wanwisa Sudprasert, Ridthee Meesat, Kullita Kolanan, Harry J. Whitlow, Henry Udegou, Armin B De Vera and Nareash Deoli; *Comparative study on phase proportion in dental amalgams using micro-PIXE and XRD techniques*; (In manuscript).
172. Visakha Chunchakorn, Phitchayapa Ratchathamma, Harry J. Whitlow and Orapin Chienthavorn; *Inexpensive Simple Extraction of Trace PAHs from Real Water using PS-DVB Monolithic Bead*, (In manuscript)

Publications in international conference proceedings with referee procedure

173. Inst.Phys. Conf. Ser. No. 35(1977)35. *Solubility of the group IV chalcogenides in I-III-VI₂ compounds*. B.R. Pamplin, T. Ohachi, S. Maeda, P. Negrete, T.P. Elworthy, R. Sanderson and H.J. Whitlow.
174. Proc. 3rd. Nordic Conf. on the Application of Scientific Methods in Archaeology, ISKOS 5, T. Edgren and H. Jungner (eds.): *Ion beam analysis methods for determining major and minor element concentrations in artefacts*. H.H. Andersen and H.J. Whitlow.
175. Late-News Paper presented at 16th. European Solid State Device Conference, Univ. of Cambridge, U.K. 8-11 Sept. 1986. *Thermal redistribution of process induced fluorine in LPCVD-W/Si contact structures*. H.J. Whitlow, J. Keinonen, T. Erikson, A. Anttila, M. Östling and S. Petersson.
176. Proc. European SOI workshop: from material to devices, Meylan, France, 15-17th. March 1988,(ed.) D. Bensahel and G. Bomchil. *Evaluation of light element contamination in SIMOX substrates by Recoil and SIMS analysis*. K.J. Reeson, H.J. Whitlow, R. J. Chater, J. Kilner, C.S. Petersson and P.L.F. Hemment.
177. *Mass- and energy dispersive recoil spectrometry studies of light element contamination in ion beam synthesised buried oxide layers in silicon*. H.J. Whitlow, K.J. Reeson, P.L.F. Hemment and C.S. Petersson. in: *Selected Topics in Electronic Materials*,(eds.) B.R. Appleton, D.K. Bielsen, W.L. Brown and J.A. Knapp, Materials Research Society Extended Abstracts EA18(1988)149.
178. *Mass and energy dispersive recoil spectrometry, a new quantitative depth profiling technique for microelectronic technology*. H.J. Whitlow, Proc. High energy and heavy ion beams in materials analysis workshop, Albuquerque, New Mexico, June 14-17, 1989, Edited by J.R. Tesmer, C.J. Maggiore and M. Natasi, J.C. Barbour and J.W. Mayer, (Materials Research Society, Pittsburgh, 1990), p.73.
179. *Time of flight spectrometry methods for analysis of materials with heavy ions*. H.J. Whitlow, Proc. High energy and heavy ion beams in materials analysis workshop, Albuquerque, New Mexico, June

- 14-17, 1989, Edited by J.R. Tesmer, C.J. Maggiore and M. Natasi, J.C. Barbour and J.W. Mayer, (Materials Research Society, Pittsburgh, 1990), p.243.
180. *Regional and seasonal variations of fine particle seasalt near the New South Wales Coast during 1992 and 1993.* A. Gimsenius, D.D. Cohen and H.J. Whitlow. Proc. 13th Int. Clean Air Conf. Adelaide, Australia, 22-25 Sept 1996 p. 227-231.
181. *Internal Calibration of Hydrogen ERD Spectra Using the Forward Scattered He Signal from a Silicon $\Delta E-E$ Telescope.* M. El Bouanani, P.N. Johnston, I.F. Bubb and H.J. Whitlow, in: CP 392, Application of accelerators in Research and Industry, (eds.) J.L. Duggan and I.L. Morgan, (AIP Press, New York, 1997). p. 647
182. Proc. 4th International Conference on Thin Film Physics and Applications, Shanghai, China, 8-11 2000 *Characterisation of optical storage media films by time of flight-energy elastic recoil detection analysis (ToF-ERDA)* Y. Zhang, L. Johansson, T. Winzell G. Possnert and H.J. Whitlow.
183. Proc. 34th SNEAP Conference October 2001, *New Vistas in ion-materials interactions*, H.J. Whitlow, (eds. R. Hellborg, M. Faarinen, C.E. Magnusson, P. Person, G. Skoog, K. Stenström) (Department of Physics, Lund University, Lund 2002) p. 240.
184. V.A. Avdeichikov, A.I. Bogdanov, O.V. Lozhkin, Y.A. Murin, M. Berg, L. Carlen, R. Elmer, R. Ghetti, B. Jakobsson, B. Noren, H. Ryde, A. Oskarsson, H.J. Whitlow, J.P. Bondorf, K. Sneppen, M. Chronqvist, O. Skeppstedt, C. Ekstrom, G. Ericsson, L. Westerberg, M. Guttormsen, F. Kox, Merchez, D. Rebreyend, J. Julien, G. Lovhoiden, K. Nybo, T.-F. Thorsteinsen, S. Mrowczynski, S. Pratt, *pp-, nn- and np interferometry in 30 A MeV reactions.* in Proceedings of the 8th Winter Workshop on Nuclear Dynamics. Advances in Nuclear Dynamics, 1992, (World Scientific, Singapore) p 246-54.
185. Y. Zhang, G. Possnert and H. J. Whitlow, *Application of Time of Flight-Energy Elastic Recoil Detection For Information-Storage Media Analysis.* AIP Conf. Proc. 680(2003)pp. 396-399.
186. H. J. Whitlow, F. Watt, A. Bettiol, J. van Kan, I. Maximov, L. Montelius, V. Auželyté, *High electric field electrode structures produced by MeV proton beam writing* Proc. BESTEN. Ed. S.T. Nakagawa, Okayama University of Science (Feb. 2004)
187. H. J. Whitlow, F. Watt, A. Bettiol, J. van Kan, I. Maximov, L. Montelius, V. Auželyté, *Focused MeV and keV Ion Beam (FIB) for high-spatial density nanometre lithography*, Proc. Japan. Electrochemical Society Spring meeting, Yokohama, Symposium March 2004. Denki Kagakkai Taikai Koen Yoshishu 71(2004)460.
188. Y. Zhang and H.J. Whitlow, *MeV ion beam modification of materials*, in: *Electrostatic Accelerators* (ed.) R. Hellborg (Springer, Berlin, 2005) p.507.
189. H.J. Whitlow and H. Timmers, *Charge exchange and electron stripping:* in: *Electrostatic Accelerators* (ed.) R. Hellborg (Springer, Berlin, 2005) p.181.
190. S. Gorelick, T. Sajavaara, M. Laitinen, N. Puttaraksa, H.J. Whitlow, *Resolution performance of Programmable Proximity Aperture MeV ion Beam Lithography System.* Mater. Res. Soc. Symp. Proc. 1020(2007) 1020-GC03-04.
191. S. Sangyuenyongpipat, H. J. Whitlow, S. T. Nakagawa, E. Yoshida, *Lithography with MeV energy ions for biomedical applications: accelerator considerations*, Proc. CAARI 2008, American Institute of Physics 1099(2009)282. <http://link.aip.org/link/?APCPCS/1099/282/1>
192. Thai Physics Journal (Serie 4, 2009) *MeV ion beam lithography– a new tool for biomedicine and microfluidics*, H. J. Whitlow, S. Sangyuenyongpipat, L.P. Wang, S. Gorelick, T. Sajavaara, V.

- Marjomäki, L. Gilbert N. Puttaraksa and S. Singkarat (In press)
193. Thai Physics Journal (Serie 4, 2009) *In-situ Ion Beam Fluence Monitoring System for CMU-MeV Ion Beam Lithography*, N. Puttaraksa, M. W. Rhodes, T. Kamwanna, U. Tippawan1, C. Thongleurm, W. Ginamoon, H. J. Whitlow, and S. Singkarat (In press)
194. H. J. Whitlow, O. Chienthavorn, H. Eronen, T. Sajavaara, M. Laitinen, R. Norarat, L. K. Gibert, *Development of PIXE measurement of Ca changes resulting from viral transduction in cells*, Proc. 21st Applications of Accelerators in Research and Industry Conference , (eds.) F.D. McDaniel and B.L. Doyle, AIP Conf. Series 1336 (2011) 295-298; doi: 10.1063/1.3586107
195. H. J. Whitlow, R. Norarat, T. Sajavaara, M. Laitinen, K. Ranttila, P. Heikkinen, V. Hänninen, M. Rossi, P. Jones, J. Timonen, L. K. Gilbert, V. Marjomäki, M. Ren, J. A. van Kan, T. Osipowicz, F. Watt, *Investigation of Multi-resolution Support for MeV Ion Microscopy Imaging*, Proc. 21st Applications of Accelerators in Research and Industry Conference , (eds.) F.D. McDaniel and B.L. Doyle, AIP Conf. Series 1336 (2011) 253-256; doi: 10.1063/1.3586098
196. S. Unai, N. Puttaraksa, N. Pussadee, K. Singkarat, M. W. Rhodes, H. J. Whitlow, S. Singkarat, *Influence of MeV H⁺ Ion Beam Flux on Crosslinking and Blister Formation in PMMA Resist*, Siam Physics Congress SPC2011, 23-26 March 2011.
197. V. Chunhakorn, S. Unai, S. Singkarat, H.J. Whitlow, J.V. Sweedler, O. Chienthavorn, *Liquid chromatography with C8 monolith in a microchip*, Proc. 14th Asian Chemical Congress, Bangkok, 6-9 Sept. 2011 PO-G2-75, p. 141
198. H.J. Whitlow, *Analytical use of ion accelerators in chemistry*, Proc. 14th Asian Chemical Congress, Bangkok, 6-9 Sept. 2011 INV-G7-15, p. 490.
199. H. J. Whitlow, P. Jeanneret, E. Guibert, S. Brun, R. Norarat, M. Bergamin, A. Homsy, E. Laux, H. Keppner, S. Schintke, V.Savu, J. Brugger, *Micro- and Nano-patterning using MeV ions with stencil and aperture masks*, Micro-Nano Engineering, Sept. 22-26, 2014 Lausanne, Switzerland 2014.
200. J. Matthey, P. Jeanneret, O. Banakh, H. Whitlow, F. Bisoffi, E. Guibert and C. Csefalvey; *The densities and corrosion barrier performance of tantalum and titanium thin films deposited by DCMS and HiPIMS.*, Proc. Int. Conf. Metallurgical Coatings and Thin Films, San Diego, CA, USA. 25-29 April, 2016 (In manuscript).

Books

201. Surface *Characterization: A users sourcebook*, (Eds.) D. Brune, R. Hellborg, H.J. Whitlow and O. Hunderi (Scandinavian Scientific Press –Wiley-VCH, Weinheim, 1997)
202. R. Hellborg , H. J. Whitlow, Y. Zhang (eds.) *Ion beams in nanoscience and –technology*, (Springer, Heidelberg, 2009)
203. Ragnar Hellborg and Harry J. Whitlow; *The electrostatic accelerator: A versatile tool*;(Morgan & Claypool Publisher) (To be submitted Sept 2018)

Book chapters

204. *Rutherford Backscattering Spectrometry and Recoil Spectrometry*, H.J. Whitlow and M. Östling, in: *Surface Characterization: A users sourcebook*, (Eds.) D. Brune, R. Hellborg, H.J. Whitlow and O. Hunderi (Scandinavian Scientific Press –Wiley-VCH, Weinheim, 1997) p. 254.
205. *A guide to Surface Analysis*, H.J. Whitlow, K. Kristiansson and O. Hyndari, in: *Surface Analysis: A users sourcebook*, (Eds in: *Surface Characterization: A users sourcebook*, (Eds.) D. Brune, R. Hellborg, H.J. Whitlow and O. Hunderi (Scandinavian Scientific Press –Wiley-VCH, Weinheim, 1997) p. 244.
206. *Nuclear reaction Analysis*, H.J. Whitlow and R. Hellborg, in: *Surface Analysis: A users sourcebook*, (Eds in: *Surface Characterization: A users sourcebook*, (Eds.) D. Brune, R. Hellborg, H.J. Whitlow and O. Hunderi (Scandinavian Scientific Press –Wiley-VCH, Weinheim, 1997) p. 244.
207. *Reference data tables*, H. J. Whitlow, in: *Surface Analysis: A users sourcebook*, (Eds in: *Surface Characterization: A users sourcebook*, (Eds.) D. Brune, R. Hellborg, H.J. Whitlow and O. Hunderi (Scandinavian Scientific Press –Wiley-VCH, Weinheim, 1997) p. 32.
208. H.J. Whitlow and Y. Zhang, *Basics of ion scattering in nanoscale materials*, in; *Ion beams in nanoscience and –technology*, (eds.) H. J. Whitlow, Y. Zhang and R. Hellborg (Springer, Heidelberg, 2009) 69.
209. D.J. White and H.J. Whitlow, *Nanoscale engineering in biosciences*, in; *Ion beams in nanoscience and –technology*, (eds.) H. J. Whitlow, Y. Zhang and R. Hellborg, (Springer, Heidelberg, 2009) 3.
210. H.J. Whitlow and S.T. Nakagawa, *Surface crystallography terminology*, in; *Ion beams in nanoscience and –technology*, (eds.) H. J. Whitlow, Y. Zhang and R. Hellborg (Springer, Heidelberg, 2009) 169.
211. H.J. Whitlow, *Electronics for application of ion beams in nanoscience*, in; *Ion beams in nanoscience and –technology*, (eds.) H. J. Whitlow, Y. Zhang and R. Hellborg (Springer, Heidelberg, 2009) 431.
212. R. Hellborg, Y. Zhang, H.J. Whitlow, *Introduction*, in; *Ion beams in nanoscience and –technology*, (eds.) H. J. Whitlow, Y. Zhang and R. Hellborg (Springer, Heidelberg, 2009) xix.
213. R. Hellborg and H.J. Whitlow; *Industrial Aspects of Ion Beam Analysis*, in; *Industrial Accelerators and their application*; (eds.) R.W. Hamm and M.E. Hamm, (World Scientific, 2012)183-242.
214. H.J. Whitlow and M.-Q. Ren; *Biomedical Applications*; in; *Ion Beam Analysis: fundamentals and Applications*; (eds.) M. Nastasi, J.W. Mayer, Y. Wang, (CRC Press, 2015)309-337

Conference publications with no referee practice

215. Proc. 1st. Nordic Conf. on Physics in Industry. M. Vulli and G. Graeffe (ed.): *Ion beam mixing of Al on Si and SiO₂*. J. Keinonen, H.J. Whitlow and M. Erola.
216. *Mass-Dispersive Recoil Spectrometry — a new method for quantitative depth profiling in microelectronic technology*. H.J. Whitlow and C. S. Petersson. Proc. Nordic Semiconductor Meeting, Stockholm June 5—8, 1988.(ed.) M. Östling, p 360.
217. Vakuum Nytt no 49(1989)23. *Introduction to Rutherford Backscattering Spectrometry and Recoil Spectrometry*, H.J. Whitlow.
218. Proc. 7th. Nordic meeting on Nuclear Physics, Vigsø, Denmark 17-21 Aug. 1992. *Development of CHICSI: a multi-detector particle telescope for intermediate energy heavy ion physics at CELSIUS*.

- H.J. Whitlow, V. Avdeichikov, M. Guttormsen, B. Jakobsson, J. Nyberg, K. Nybø, A. Oskarsson, L. Westerberg and the CHIC collaboration.
219. H.J. Whitlow, M. El Bouanani, L. Persson, M. Hult, P. Jönsson, M. Andersson, M. Östling, C. Zaring, P.N. Johnston, I.F. Bubb, S.R. Walker, W.B. Stannard, D.D. Cohen and N. Dytlewski. *Multivariate techniques of analysis for ToF—E Recoil Spectrometry Data*. Proc, 9th Australian Conference on Nuclear Techniques of Analysis. Newcastle NSW, 1995 (ed.) D.J. O' Connor, p.158
220. H.J. Whitlow, J. Jaworowski, M. Leandersson, M. El Bouanani, B. Jakobsson, J. Romanski, L. Westerberg, E.J. Van Veldhuizen and the CHICSi collaboration. *Development of Si-based detectors for intermediate energy heavy-ion physics at a storage ring accelerator*. Proc, 9th Australian Conference on Nuclear Techniques of Analysis. Newcastle NSW, 1995 (ed.) D.J. O' Connor, p.2
221. T.R.H. Winzell, I.F. Bubb, R. Short, H.J. Whitlow and P.N. Johnston, *Elastic Recoil Detection Analysis of Hydrogen in Polymers*, Proc, 9th Australian Conference on Nuclear Techniques of Analysis. Newcastle NSW, 1995 (ed.) D.J. O' Connor, p.164
222. H. J. Whitlow, S.T. Nakagawa, A Bettiol, J van Kan, I. Maximov, L. Montelius, V. Auželyté and F. Watt. *Dose distributions and proximity effect for sub-100 nm resolution two-dimensional pattern writing with proton beam lithography* 1st Int. workshop on proton Beam Writing, Singapore 18-24 July 2004 collected presentations published on-line.
223. Proc. ChinaNano2007. Beijing, P.R. (June 4-7), *Research in Jyväskylä on MeV Ion beam Lithography*, H. J. Whitlow, T. Sajavaara, S. Gorelick, A. Sagari A.R., M. Laitinen, T. Ylimäki, S. Sangyuenyongpipat, N. Puttaraksa, D. White, S.T. Nakagawa, M. Ren, J. A. Van Kan, A. Bettiol, T. Osipowicz, F. Watt, P. Rahkila, S. Cheng.
224. The European Physics Journal A, *An Experimental Study of $^{1,2,3}H$, $^{3,4,6}He$, $^{6,7,8,9}Li$, $^{7,9,10,11}Be$ and $^{10,11,12}B$ isotope production from interactions of 14A and 32A MeV ^{14}N with $^{112,12}Sn$* . A. Fokin, O.V. Lozhkin, V. Bellini, M. Berg, A. Bgdanov, J.P. Bondorf, A. Budzanowski, L. Carlén, C. Cornelli, M. Cronquist, B. Czech, R. Elmér, G. Ericsson, R. Ghetti, M. Guttormsen, J. Helgesson, D. Idier, K. Ikei, B. Jakobsson, J. Julien, A. Kuznetsov, V. Lyapin, G. Løvhøiden, F. Merchez, I. Miishustin, T. Motobayashi, Y. Murin, J. Mårtensson, B. Norén, J. Nyberg, K. Nybø, A. Oskarsson, G. Riera, A. Siwek, Ö. Skeppstedt, I. Skwirczynska, L. Spurduto, C. Sutura, T.F. Horsteinsen, L. Westerberg, H.J. Whitlow and M. Zubkov. (CHIC Collaboration) (Submitted) (Cosmic and Sub Atomic Physics Report LUIP 9802)

Other publications and books

1. Nucl. Instrum and Methods A272(1988)925. **Book Review**, *Symposium of North Eastern Accelerator Personnel, Nuclear Structure Laboratory, University of Notre Dame, Nov. 3-6, 1986*, eds. E.D. Berners, U. Garg and C.P. Browne (World Scientific Publishing Co., Singapore, 1987), H.J. Whitlow and G. Possnert.
2. Vakuum Nytt nr. 48 maj 1989, Svenska Vakuumsällskapet, Edited by: H.J. Whitlow.
3. Vakuum Nytt nr. 49 dec 1989, Svenska Vakuumsällskapet, Edited by: H.J. Whitlow.
4. Vakuum Nytt nr. 50, jun 1990, Svenska Vakuumsällskapet, Edited by: H.J. Whitlow.
5. Nucl. Instrum. and Methods B47(1990)477. **Book Review**, *High Energy Ion Beam Analysis of Solids.*, G. Götz and K. Gärtner (eds.), (Akademie-Verlag, Berlin, 1988) H.J. Whitlow
6. Book Editor: *Surface Analysis: A users sourcebook*, (Eds.) D. Brune, R. Hellborg, H.J. Whitlow and O. Hunderi (Scandinavian Scientific Press –Wiley-VCH, Weinheim, 1997)

7. Book Editor: *Ion beams in Nanoscience and Technology*, (Eds.) R. Hellborg, H.J. Whitlow and Y. Zhang, (Springer, Heidelberg, 2010)
1. Tribologica 16, No. 1(1997)3. *Surface analysis of lubricated sliding metal contacts*, Part 1, *Comparison between conventional and unconventional surface analytical techniques*. E. Johansson, P. A. Ingemarsson, S. Hogmark, P. Redelius, H.J. Whitlow, T. Ericsson and U. Gelius.

Reports

1. *The characterization of recombination levels in silicon introduced by heat treatment*. H.J. Whitlow M.Sc. Dissertation. Brighton Polytechnic 1977.
8. ОБЕРХОСТЬ. *The elemental angular distribution of material sputtered from copper-platinum alloys*. H.H. Andersen, V. Chernysh, B. Stenum, T. Sørensen and H.J. Whitlow. (Refereed and accepted for publication in Russian, status unknown)
2. *Terminal report on work carried out during tenure of NATO postdoctoral fellowship B/RF/6150*. H.J. Whitlow.
3. *Notes on the use of thoriated-tungsten filaments in the duoplasmatron ion-source of the Helsinki Tandem Accelerator*. H.J. Whitlow, Dept. of Physics, Univ. of Helsinki, SF-00170 Helsinki, Finland. April 1984.
4. *KTH goniometer control system*. H.J. Whitlow, KTH Mikrovågsteknik, Stockholm, Sweden. (opublicerad rapport).
5. *KTH goniometer*. H.J. Whitlow, KTH Mikrovågsteknik, Stockholm, Sweden.
6. J. Archaeol. Sci. *Characteristic changes in the water concentration profiles in microwear on flint tools*. H.H. Andersen, H.J. Whitlow and H. Juel. Jensen. (In manuscript)
7. H.J. Whitlow, L. Hansson, C.S. Petersson, R. Bornhed, and G. Wahlsten, *Automatic RBS measurements for semiconductor research: goniometer and data acquisition system design considerations*. Report. TRITA-FTE-8901, KTH Avdelningen för Fasta Tillståndets Elektronik, Stockholm 1988.
8. M. Guttormsen, V. Avdeichikov, L. Carlén, A. Oskarsson, L. Westerberg, H.J. Whitlow, B. Jakobsson and C. Ekström. *CHICSI (vesion II) A proposal for a multi-detector γ -E-E particle telescope*. M. Guttormsen (ed.) (University of Oslo report UiO/PHYS/93-01, 1992)
9. H.J. Whitlow, *TASS Turbo Analysis Support for recoil spectrometry using the CERN Physics Analysis Workstation (PAW) software*. (Dept. of Nuclear Physics, Lund Institute of Technology, Sweden, 1993)
10. *Detector telescopes for low energy recoil nuclei*. H.J. Whitlow, R. Ghetti, R. Hellborg, M. Hult, G. Hyltén, J. Pallon, B. Jakobsson, L. Westerberg, Z. Wang and P. Omling. Nuclear Physics Report LUTFD" / (TFKF-3073) 1-7 / (1993) (Department of Nuclear Physics, Lund Institute of Technology, Sweden, May 1993)
11. H.J. Whitlow, *A readout scheme for CHICSI in a one VLSI chip per detector telescope senario*. CHICSI technical note. (October 1993).
12. H.J. Whitlow, *Travel Report on visit to Australia and China 20 November 7 December 1995*.

13. H.J. Whitlow, *Travel report on visit to Australia May-June 1998*.
14. H.J. Whitlow; *An occasional note on the first-order theory of the Time-of-Flight Reflectron Mass spectrometer for MeV-SIMS*, (December, 2017)
15. H.J. Whitlow; *An occasional note on: the ratio of peak areas and statistical uncertainties*. (April 2018).

Teaching material

1. *Mass dispersive recoil spectrometry — an introduction*, H.J. Whitlow, KTH Avdelningen för Fasta Tillståndets Elektronik, Stockholm 1988.
2. *Laboratory exercise in Rutherford Backscattering Spectrometry*, KTH - Avdelningen för Fasta Tillståndets Elektronik, Stockholm, 1988.
3. *Rutherford backscattering spectrometry - laboratory notes*. Avdelningen för kärnfysik, Lunds Tekniska Högskola, Lund 1992.
4. *Computer simulation of ion-solid interactions*. Avdelningen för kärnfysik, Lunds Tekniska Högskola, Lund 1992.
5. FY 7990 *Energifysik (Energy Physics) course website with lectures, labs and examples.*, School of Technology and Society, Malmö Högskola, 2002. 2002, 2003
6. FY 7010 *Applied Physics for Engineers course website with lectures, projects, project plans and labs*, School of Technology and Society, Malmö Högskola, 2002. 2002
7. FYS397 *Microscopy and Lithography: for nanoscience and technology* Website with lectures, and labs, Department of physics, University of Jyväskylä, 2005.
8. FYSY110 *Physics for modern biology and medicine*, Website with lectures, and labs, Department of physics, University of Jyväskylä, 2005
9. FYSS 330 *Microscopy and materials* Website with lectures, and labs, Department of physics, University of Jyväskylä, 2005-6
10. FYSS 320 *Vacuum techniques*, Website with lectures, and labs, Department of physics, Special course organized by University of Jyväskylä for National University of Singapore, 2006
11. FYSS 310 *Control Engineering* Website with lectures, and labs, Department of physics, University of Jyväskylä, 2007-8 <http://harry.whitlow.se/FYSS310/Index.htm>
12. FYSM 550 *Fundamental Aspects of Ion-Matter Interactions for Experimentalists*, Website with lectures, and labs, Department of physics, University of Jyväskylä, 2007
13. KEM801 *Mathematical tools for renewable energy* Website with lectures, and labs, Department of physics, University of Jyväskylä, 2007
14. SCPY 661 *Effects and applications of low energy ion beam with polymeric- and bio-materials (PBM)* Mahidol University, Thailand, 2008 , http://harry.whitlow.se/SCPY_661/Index.htm

15. 403596 / 403696 / FYSM4xx "Selected topics in chemistry": *Elemental Analysis* (Kasetsart University - Thailand Feb. 2010) <http://www.harry.whitlow.se/FYSM4xx/Index.html>
16. FYSS385 *Computer based data acquisition and control* (Spring 2011 and 2012) University of Jyväskylä, 2011 <http://harry.whitlow.se/FYSS385/index.htm>
17. FYSM4yy *Surface Analysis: an integrated approach* (Kasetsart University - Thailand 14-25 Feb. 2011) <http://harry.whitlow.se/FYSM4yy/Index.html>
18. PH3/FYSV 412 *Fundamentals of ion matter interactions*, Jyväskylä Summer school 2011 Lecture course with lectures by Peter Sigmund <http://harry.whitlow.se/PH3>
19. FYSS585 *Advanced computer based data acquisition and control* (Autumn 2011/Spring 2012) <http://harry.whitlow.se/FYSS585>
20. *Ion Beam Analysis* Course module. (Autumn 2013), http://www.harry.whitlow.se/IBA_course/IBA%20course%20in%20English.pdf
21. 403596 / 403696 / FYSM4xx "Selected topics in chemistry Nanoanalysis, concentration profiling and mapping" (Kasetsart University - Thailand Feb. 2013) <http://www.harry.whitlow.se/Nanoanalysis>
22. Swiss MAS NMT Course 2.2. *Nanoanalysis II: chemical composition and mapping*, 11-15 March 2013. http://www.harry.whitlow.se/Nanoanalysis_IMA/index.htm
23. *Ion accelerator based methods in industry and research* (Kasetsart University - Thailand July. 2013) <http://www.harry.whitlow.se/IAMIR/IAMIR.html>
24. 403596 / 403696 "Microscopic chemical analysis: methods and tools." (Kasetsart University - Thailand Feb. 2014) <http://www.harry.whitlow.se/Microscopic%20chemical%20analysis/index.xhtml>
25. *LabVIEW™ for Research Engineers*, Haute-Ecole-Arc Ingénierie, internal training course, <http://www.harry.whitlow.se/LabView%20for%20Research%20Engineers/index.xhtml>

Patents and applications

1. Swedish Patent **C2 514 380**, S. Petersson, G. Thungström, H.J. Whitlow, *Integrerad halvledardetektorteleskop med låg energitröskel*.
2. International Patent (Application) **PCT/SE97/00475**. S. Petersson, G. Thungström, H.J. Whitlow, *Integrated detector*.
3. United States Patent **US 6,541,835 B1**, Apr. 1 2003, S. Petersson, G. Thungström, H.J. Whitlow. *Integrated ΔE -E detector telescope*.
4. United States Patent (provisional application) 60/535494 H.J. Whitlow, B. Jakobsson, Y. Jiren, O. Oredsson *Status unknown*
5. International Patent (Application) **PCT/SE2005/000028 Publication nr. WO 2005/066851 A1** H.J. Whitlow, B. Jakobsson, Y. Jiren, O. Oredsson *Integrated circuit for radiation detectors Status unknown*
6. Portuguese Patent Application **PT 106942 A**; *Biochip (1) e bouquet de 16 antigénios (2) para a deteção da doença de Lyme aguda e crónica*; 15 May 2105, G. Meureice de Dormale, J. Demarteau, H.J. Whitlow, L. Gilbert, N. Puttaraksa, P. Garcia-Nogales (Assigned as inventors 15 Nov. 2016)

6. US Patent application **14/891,616**; “*Biochip antigen bouquet, optical reader and method for detecting and monitoring diseases*”; Nov. 15, 2015, G. Meureice de Dormale, J. Demarteau, H.J. Whitlow, L. Gilbert, N. Puttaraksa, P. Garcia-Nogales (Assigned as inventors 16 Nov. 2016).
7. International Patent application **WO 2014/185803 A2** , “*Biochip antigen bouquet, optical reader and method for detecting and monitoring diseases*”; 15 May 2013 G. Meureice de Dormale, J. Demarteau, H.J. Whitlow, L. Gilbert, N. Puttaraksa, P. Garcia-Nogales (Assigned as inventors 16 Nov. 2016).