

Per Rugaard Poulsen
Professor
Department of Clinical Medicine - DCPT - Danish Center for Particle Therapy
Type of address: Postal address.
Palle Juul-Jensens Boulevard 99
8200
Aarhus N
Denmark
Email: ppoulsen@clin.au.dk
Mobile: +4560284065

Year of birth

1965

Educations

2005 Medical physicist specialized in radiotherapy, Aarhus University Hospital, Denmark

Academic degrees

1999 Ph.D. in Physics, Nanjing University, China
1994 M.Sc. in Physics, Aarhus University, Denmark

Research areas

Image-guided radiotherapy
Tumour motion management in radiotherapy
Dynamic MLC tracking
Dose reconstruction
Medical imaging

Present position

2018 Professor, Department of Clinical Medicine, Aarhus University, Aarhus, Denmark

Previous positions

2010-2018 Associate professor, Department of Clinical Medicine, Aarhus University, Aarhus, Denmark
2007-2009 Visiting Scholar, Department of Radiation Oncology, Stanford University, USA
2001-2007 Clinical Medical Physicist, Department of Medical Physics, Aarhus University Hospital, Denmark
1999-2000 Postdoc, Copenhagen University, Denmark
1995-1996 High School teacher, Aurehøj Statsgymnasium, Gentofte, Denmark
1991-1995 Research Fellow, Technical University of Denmark, Kgs. Lyngby, Denmark

Publications and presentations

Publikationer: 124 Peer-reviewed: 122, H-index: 30, Citations: 2520, Patents: 5 US Patents in the field of radiotherapy, Scientific meeting presentations (oral, invited or peer reviewed): 60

Supervision

1 postdoc, 8 PhD. students, 4 MSc students and 3 Medical physicists under training

Agnes Niebuhr Andersson's Cancer Research Foundation Award (2012)
DSMF Young Physicist Award (2008)

Major research grants

Danish Cancer Society (2020)
Danish Cancer Society (2016)
Danish Cancer Society (2012)
Danish Cancer Society (2009)
Danish Research Agency (1995)

Danish Research Agency (1999)

Scientific journal involvements

Reviewer for:

Acta Oncologica

International Journal of Radiation Oncology-Biology-Physics

Medical Physics

Physics in Medicine and Biology

Radiation Oncology

Radiotherapy and Oncology

Memberships

ESTRO

AAPM

DSMF

Publications

Correlation between local instantaneous dose rate and oxygen pressure reduction during proton pencil beam scanning irradiation

Kanouta, E., Johansen, J. G., Poulsen, S., Kristensen, L., Sørensen, B. S., Grau, C., Busk, M. & Poulsen, P. R., Jul 2024, In: Physics and Imaging in Radiation Oncology. 31, 100614.

Two-dimensional time-resolved scintillating sheet monitoring of proton pencil beam scanning FLASH mouse irradiations

Kanouta, E., Bruza, P., Johansen, J. G., Kristensen, L., Sørensen, B. S. & Poulsen, P. R., Jul 2024, In: Medical Physics. 51, 7, p. 5119-5129 11 p.

Proton FLASH: Impact of Dose Rate and Split Dose on Acute Skin Toxicity in a Murine Model

Sørensen, B. S., Kanouta, E., Ankjærgaard, C., Kristensen, L., Johansen, J. G., Sitarz, M. K., Andersen, C. E., Grau, C. & Poulsen, P., 30 May 2024, (E-pub ahead of print) In: International Journal of Radiation Oncology, Biology, Physics.

Oxygen enhancement ratio weighted dose quantitatively describes acute skin toxicity variations in mice after pencil beam scanning proton FLASH irradiation with changing doses and time structures

Poulsen, P. R., Johansen, J. G., Sitarz, M. K., Kanouta, E., Kristensen, L., Grau, C. & Sørensen, B. S., 8 Mar 2024, (E-pub ahead of print) In: International Journal of Radiation Oncology, Biology, Physics.

Evaluation of in vitro irradiation setup: Designed for the horizontal beamline at the Danish Centre for Particle Therapy

Frederiksen, A. T., Jensen, M. B., Poulsen, P. R., Bassler, N., Sørensen, B. S. & Sitarz, M., 13 Feb 2024, In: Acta oncologica (Stockholm, Sweden). 63, p. 23-27 5 p.

Multi-institutional consensus on machine QA for isochronous cyclotron-based systems delivering ultra-high dose rate (FLASH) pencil beam scanning proton therapy in transmission mode

Spruijt, K., Mossahebi, S., Lin, H., Lee, E., Kraus, J., Dhabaan, A., Poulsen, P., Lowe, M., Ayan, A., Spiessens, S., Godart, J. & Hoogeman, M., Feb 2024, In: Medical Physics. 51, 2, p. 786-798 13 p.

Motion-induced dose perturbations in photon radiotherapy and proton therapy measured by deformable liver-shaped 3D dosimeters in an anthropomorphic phantom

Vindbæk, S. H., Ehrbar, S., Worm, E. S., Muren, L., Tanadini-Lang, S., Petersen, J. B. B., Balling, P. & Poulsen, P. R., 2024, In: Physics and Imaging in Radiation Oncology. 31, 100609.

Spread-out Bragg peak FLASH: quantifying normal tissue toxicity in a murine model

Kristensen, L., Poulsen, P. R., Kanouta, E., Rohrer, S., Ankjærgaard, C., Andersen, C. E., Johansen, J. G., Simeonov, Y., Weber, U., Grau, C. & Sørensen, B. S., 2024, In: Frontiers in Oncology. 14, 1427667.

An experimental setup for proton irradiation of a murine leg model for radiobiological studies

Overgaard, C. B., Reaz, F., Sitarz, M., Poulsen, P., Overgaard, J., Bassler, N., Grau, C. & Sørensen, B. S., Nov 2023, In: Acta Oncologica. 62, 11, p. 1566-1573 8 p.

Repeated deep-inspiration breath-hold CT scans at planning underestimate the actual motion between breath-holds at treatment for lung cancer and lymphoma patients

Hoffmann, L., Ehmsen, M. L., Hansen, J., Hansen, R., Knap, M., Mortensen, H. R., Poulsen, P. R., Ravkilde, T., Rose, H. K., Schmidt, H. H., Worm, E. S. & Møller, D. S., Nov 2023, In: Radiotherapy and Oncology. 188, 8 p., 109887.

Difference between planned and delivered radiotherapy dose to the internal mammary nodes in high-risk breast cancer patients

Mølby Nielsen, A. W., Spejlborg, H., Lutz, C. M., Rugaard Poulsen, P. & Offeresen, B. V., Jul 2023, In: Physics and Imaging in Radiation Oncology. 27, 7 p., 100470.

A simple method to measure the gating latencies in photon and proton based radiotherapy using a scintillating crystal

Worm, E. S., Thomsen, J. B., Johansen, J. G. & Poulsen, P. R., Jun 2023, In: Medical Physics. 50, 6, p. 3289-3298 10 p.

Time-resolved dose rate measurements in pencil beam scanning proton FLASH therapy with a fiber-coupled scintillator detector system

Kanouta, E., Poulsen, P. R., Kertzsch, G., Sitarz, M. K., Sørensen, B. S. & Johansen, J. G., Apr 2023, In: Medical Physics. 50, 4, p. 2450-2462 13 p.

Intrafraction tumor motion monitoring and dose reconstruction for liver pencil beam scanning proton therapy

Nankali, S., Worm, E. S., Thomsen, J. B., Stick, L. B., Bertholet, J., Høyer, M., Weber, B., Mortensen, H. R. & Poulsen, P. R., Mar 2023, In: Frontiers in Oncology. 13, 11 p., 1112481.

The dosimetric error due to uncorrected tumor rotation during real-time adaptive prostate stereotactic body radiation therapy

Sengupta, C., Skouboe, S., Ravkilde, T., Poulsen, P. R., Nguyen, D. T., Greer, P. B., Moodie, T., Hardcastle, N., Hayden, A. J., Turner, S., Siva, S., Tai, K. H., Martin, J., Booth, J. T., O'Brien, R. & Keall, P. J., Jan 2023, In: Medical Physics. 50, 1, p. 20-29 10 p.

Dose perturbations in proton pencil beam delivery investigated by dynamically deforming silicone-based radiochromic dosimeters

Vindbæk, S. H., Muren, L., Balling, P., Petersen, J. B. B., Valdetaro, L. & Poulsen, P. R., Nov 2022, In: Physics in Medicine and Biology. 67, 23, 14 p., 235002.

Accuracy and potential improvements of surface-guided breast cancer radiotherapy in deep inspiration breath-hold with daily image-guidance

Nankali, S., Hansen, R., Worm, E., Yates, E. S., Thomsen, M. S., Offeresen, B. & Poulsen, P. R., Oct 2022, In: Physics in Medicine and Biology. 67, 19, 195006.

Pencil beam scanning proton FLASH maintains tumor control while normal tissue damage is reduced in a mouse model

Sørensen, B. S., Sitarz, M. K., Ankjærgaard, C., Johansen, J. G., Andersen, C. E., Kanouta, E., Grau, C. & Poulsen, P., Oct 2022, In: Radiotherapy and oncology : journal of the European Society for Therapeutic Radiology and Oncology. 175, p. 178-184 7 p.

Experimental investigation of dynamic real-time rotation-including dose reconstruction during prostate tracking radiotherapy

Muurholm, C. G., Ravkilde, T., De Roover, R., Skouboe, S., Hansen, R., Crijns, W., Depuydt, T. & Poulsen, P. R., Jun 2022, In: Medical Physics. 49, 6, p. 3574-3584 11 p.

Time structure of pencil beam scanning proton FLASH beams measured with scintillator detectors and compared with log files

Kanouta, E., Johansen, J. G., Kertzsch, G., Sitarz, M. K., Sørensen, B. S. & Poulsen, P. R., Mar 2022, In: Medical Physics. 49, 3, p. 1932-1943 12 p.

***In vivo* validation and tissue sparing factor for acute damage of pencil beam scanning proton FLASH**

Singers Sørensen, B., Krzysztof Sitarz, M., Ankjærgaard, C., Johansen, J., Andersen, C. E., Kanouta, E., Overgaard, C., Grau, C. & Poulsen, P., Feb 2022, In: Radiotherapy and oncology : journal of the European Society for Therapeutic Radiology and Oncology. 167, p. 109-115 7 p.

The markerless lung target tracking AAPM Grand Challenge (MATCH) results

Mueller, M., Poulsen, P., Hansen, R., Verbakel, W., Berbeco, R., Ferguson, D., Mori, S., Ren, L., Roeske, J. C., Wang, L., Zhang, P. & Keall, P., Feb 2022, In: Medical Physics. 49, 2, p. 1161-1180 20 p.

A real-time IGRT method using a Kalman filter framework to extract 3D positions from 2D projections

Nguyen, D. T., Keall, P., Booth, J., Shieh, C. C., Poulsen, P. & O'Brien, R., Nov 2021, In: Physics in Medicine and Biology. 66, 21, 214001.

Real-time dose-guidance in radiotherapy: Proof of principle

Muurholm, C. G., Ravkilde, T., Skouboe, S., Worm, E., Hansen, R., Høyer, M., Keall, P. J. & Poulsen, P. R., Nov 2021, In: Radiotherapy and Oncology. 164, p. 175-182 8 p.

Strategies for Motion Robust Proton Therapy With Pencil Beam Scanning for Esophageal Cancer

Møller, D. S., Poulsen, P. R., Hagner, A., Dufour, M., Nordmark, M., Nyeng, T. B., Mortensen, H. R., Lutz, C. M. & Hoffmann, L., Oct 2021, In: International Journal of Radiation Oncology Biology Physics. 111, 2, p. 539-548 10 p.

Uniform versus non-uniform dose prescription for proton stereotactic body radiotherapy of liver tumors investigated by extensive motion-including treatment simulations

Worm, E. S., Hansen, R., Hoyer, M., Weber, B., Mortensen, H. & Poulsen, P. R., Oct 2021, In: Physics in Medicine and Biology. 66, 20, 205009.

First experimental evaluation of multi-target multileaf collimator tracking during volumetric modulated arc therapy for locally advanced prostate cancer

Hewson, E. A., Dipuglia, A., Kipritidis, J., Ge, Y., O'Brien, R., Roderick, S., Bell, L., Poulsen, P. R., Eade, T., Booth, J. T., Keall, P. J. & Nguyen, D. T., Jul 2021, In: Radiotherapy and Oncology. 160, p. 212-220

AAPM Task Group 264: The safe clinical implementation of MLC tracking in radiotherapy

Keall, P. J., Sawant, A., Berbeco, R. I., Booth, J. T., Cho, B., Cerviño, L. I., Cirino, E., Dieterich, S., Fast, M. F., Greer, P. B., Munck af Rosenschöld, P., Parikh, P. J., Poulsen, P. R., Santanam, L., Sherouse, G. W., Shi, J. & Stathakis, S., May 2021, In: Medical Physics. 48, 5, p. e44-e64 21 p.

Intrafraction motion monitoring to determine PTV margins in early stage breast cancer patients receiving neoadjuvant partial breast SABR

Mouawad, M., Lailey, O., Poulsen, P., O'Neil, M., Brackstone, M., Lock, M., Yaremko, B., Shmuilovich, O., Kornecki, A., Ben Nachum, I., Muscedere, G., Lynn, K., Karnas, S., Prato, F. S., Thompson, R. T. & Gaede, S., May 2021, In: Radiotherapy and Oncology. 158, p. 276-284 9 p.

Dosimetric impact of intrafraction prostate rotation and accuracy of gating, multi-leaf collimator tracking and couch tracking to manage rotation: An end-to-end validation using volumetric film measurements

De Roover, R., Hansen, R., Crijns, W., Muurholm, C. G., Poels, K., Skouboe, S., Haustermans, K., Poulsen, P. R. & Depuydt, T., Mar 2021, In: Radiotherapy and Oncology. 156, p. 10-18 9 p.

Single-fraction prostate stereotactic body radiotherapy: Dose reconstruction with electromagnetic intrafraction motion tracking

Jaccard, M., Ehrbar, S., Miralbell, R., Hagen, T., Koutsouvelis, N., Poulsen, P., Rouzaud, M., Tanadini-Lang, S., Tsoutsou, P., Guckenberger, M. & Zilli, T., Mar 2021, In: Radiotherapy and Oncology. 156, p. 145-152 8 p.

Six degrees of freedom dynamic motion-including dose reconstruction in a commercial treatment planning system

Skouboe, S., De Roover, R., Gammelmark Muurholm, C., Ravkilde, T., Crijns, W., Hansen, R., Depuydt, T. & Poulsen, P. R., Mar 2021, In: Medical Physics. 48, 3, p. 1427-1435 9 p.

MLC tracking for lung SABR is feasible, efficient and delivers high-precision target dose and lower normal tissue dose
Booth, J., Caillet, V., Briggs, A., Hardcastle, N., Angelis, G., Jayamanne, D., Shepherd, M., Podreka, A., Szymura, K., Nguyen, D. T., Poulsen, P., O'Brien, R., Harris, B., Haddad, C., Eade, T. & Keall, P., Feb 2021, In: Radiotherapy and Oncology. 155, p. 131-137 7 p.

Adapting to the motion of multiple independent targets using multileaf collimator tracking for locally advanced prostate cancer: Proof of principle simulation study

Hewson, E. A., Ge, Y., O'Brien, R., Roderick, S., Bell, L., Poulsen, P. R., Eade, T., Booth, J. T., Keall, P. J. & Nguyen, D. T., Jan 2021, In: Medical Physics. 48, 1, p. 114-124 11 p.

Study protocol of the LARK (TROG 17.03) clinical trial: a phase II trial investigating the dosimetric impact of Liver Ablative Radiotherapy using Kilovoltage intrafraction monitoring

Lee, Y. Y. D., Nguyen, D. T., Moodie, T., O'Brien, R., McMaster, A., Hickey, A., Pritchard, N., Poulsen, P., Tabaksblat, E. M., Weber, B., Worm, E., Pryor, D., Chu, J., Hardcastle, N., Booth, J., GebSKI, V., Wang, T. & Keall, P., 2021, In: BMC Cancer. 21, 1, 9 p., 494.

Beam characterization and feasibility study for a small animal irradiation platform at clinical proton therapy facilities

Gerlach, S., Pinto, M., Kurichyanil, N., Grau, C., Hérault, J., Hillbrand, M., Poulsen, P. R., Safai, S., Schippers, J. M., Schwarz, M., Sndergaard, C. S., Tommasino, F., Verroi, E., Vidal, M., Yohannes, I., Schreiber, J. & Parodi, K., Dec 2020, In: Physics in Medicine and Biology. 65, 24, 18 p., 245045.

Patterns of practice for adaptive and real-time radiation therapy (POP-ART RT) part I: Intra-fraction breathing motion management

Anastasi, G., Bertholet, J., Poulsen, P., Roggen, T., Garibaldi, C., Tilly, N., Booth, J. T., Oelfke, U., Heijmen, B. & Aznar, M. C., Dec 2020, In: Radiotherapy and Oncology. 153, p. 79-87 9 p.

Fully automated detection of heart irradiation in cine MV images acquired during breast cancer radiotherapy

Poulsen, P. R., Thomsen, M. S., Hansen, R., Worm, E., Spejlborg, H. & Offeresen, B., Nov 2020, In: Radiotherapy & Oncology. 152, p. 189-195 7 p.

Is multileaf collimator tracking or gating a better intrafraction motion adaptation strategy? An analysis of the TROG 15.01 stereotactic prostate ablative radiotherapy with KIM (SPARK) trial

Hewson, E. A., Nguyen, D. T., O'Brien, R., Poulsen, P. R., Booth, J. T., Greer, P., Eade, T., Kneebone, A., Hruby, G., Moodie, T., Hayden, A. J., Turner, S. L., Hardcastle, N., Siva, S., Tai, K. H., Martin, J. & Keall, P. J., Oct 2020, In: Radiotherapy and Oncology. 151, p. 234-241 8 p.

Dosimetric effect of intrafraction motion and different localization strategies in prostate SBRT

Vanhanen, A., Poulsen, P. & Kapanen, M., Jul 2020, In: Physica Medica. 75, p. 58-68 11 p.

Isotoxic dose prescription level strategies for stereotactic liver radiotherapy: the price of dose uniformity

Hansen, A. T., Poulsen, P. R., Hoyer, M. & Worm, E. S., May 2020, In: Acta Oncologica. 59, 5, p. 558-564 7 p.

Simulated multileaf collimator tracking for stereotactic liver radiotherapy guided by kilovoltage intrafraction monitoring: Dosimetric gain and target overdose trends

Poulsen, P. R., Murtaza, G., Worm, E. S., Ravkilde, T., O'Brien, R., Grau, C., Høyer, M. & Keall, P., Mar 2020, In: Radiotherapy and Oncology. 144, p. 93-100 8 p.

Real-Time Image Guided Ablative Prostate Cancer Radiation Therapy: Results From the TROG 15.01 SPARK Trial

Keall, P., Nguyen, D. T., O'Brien, R., Hewson, E., Ball, H., Poulsen, P., Booth, J., Greer, P., Hunter, P., Wilton, L., Bromley, R., Kipritidis, J., Eade, T., Kneebone, A., Hruby, G., Moodie, T., Hayden, A., Turner, S., Arumugam, S. & Sidhom, M. & 5 others, Hardcastle, N., Siva, S., Tai, K. H., GebSKI, V. & Martin, J., 2020, In: International Journal of Radiation Oncology Biology Physics. 107, 3, p. 530-538 9 p.

First clinical real-time motion-including tumor dose reconstruction during radiotherapy delivery

Skouboe, S., Ravkilde, T., Bertholet, J., Hansen, R., Worm, E. S., Muurholm, C. G., Weber, B., Høyer, M. & Poulsen, P. R., Oct 2019, In: Radiotherapy and Oncology. 139, p. 66-71 6 p.

A deep learning framework for automatic detection of arbitrarily shaped fiducial markers in intrafraction fluoroscopic images

Mylonas, A., Keall, P. J., Booth, J. T., Shieh, C. C., Eade, T., Poulsen, P. R. & Nguyen, D. T., 2019, In: Medical Physics. 46, 5, p. 2286-2297 12 p.

See, Think, and Act: Real-Time Adaptive Radiotherapy

Keall, P., Poulsen, P. & Booth, J. T., 2019, In: Seminars in Radiation Oncology. 29, 3, p. 228-235 8 p.

Setup strategies and uncertainties in esophageal radiotherapy based on detailed intra- and interfractional tumor motion mapping

Hoffmann, L., Poulsen, P. R., Ravkilde, T., Bertholet, J., Kruhlikava, I., Helbo, B. L., Schmidt, M. L. & Nordmark, M., 2019, In: Radiotherapy and Oncology. 136, July, p. 161-168 8 p.

Simulated real-time dose reconstruction for moving tumors in stereotactic liver radiotherapy

Skouboe, S., Poulsen, P. R., Muurholm, C. G., Worm, E., Hansen, R., Høyer, M. & Ravkilde, T., 2019, In: Medical Physics. 46, 11, p. 4738-4748 11 p.

Technical Note: In silico and experimental evaluation of two leaf-fitting algorithms for MLC tracking based on exposure error and plan complexity

Caillet, V., O'Brien, R., Moore, D., Poulsen, P., Pommer, T., Colvill, E., Sawant, A., Booth, J. & Keall, P., 2019, In: Medical Physics. 46, 4, p. 1814-1820 7 p.

The accuracy and precision of the KIM motion monitoring system used in the multi-institutional TROG 15.01 Stereotactic Prostate Ablative Radiotherapy with KIM (SPARK) trial

Hewson, E. A., Nguyen, D. T., O'Brien, R., Kim, J. H., Montanaro, T., Moodie, T., Greer, P. B., Hardcastle, N., Eade, T., Kneebone, A., Hruby, G., Hayden, A. J., Turner, S., Siva, S., Tai, K. H., Hunter, P., Sams, J., Poulsen, P. R., Booth, J. T. & Martin, J. & 1 others, Keall, P. J., 2019, In: Medical Physics. 46, 11, p. 4725-4737 13 p.

Validation of fast motion-including dose reconstruction for proton scanning therapy in the liver

Colvill, E., Petersen, J. B. B., Hansen, R., Worm, E., Skouboe, S., Høyer, M. & Poulsen, P. R., 20 Nov 2018, In: Physics in Medicine and Biology. 63, 22, 9 p., 225021.

Review of Real-Time 3-Dimensional Image Guided Radiation Therapy on Standard-Equipped Cancer Radiation Therapy Systems - Are We at the Tipping Point for the Era of Real-Time Radiation Therapy?

Keall, P. J., Nguyen, D. T., O'Brien, R., Zhang, P., Happersett, L., Bertholet, J. & Poulsen, P. R., 15 Nov 2018, In: International Journal of Radiation Oncology, Biology, Physics. 102, 4, p. 922-931 10 p.

Investigating multi-leaf collimator tracking in stereotactic arrhythmic radioablation (STAR) treatments for atrial fibrillation

Lydiard, S., Caillet, V., Ipsen, S., O'Brien, R., Blanck, O., Poulsen, P. R., Booth, J. & Keall, P., 28 Sept 2018, In: Physics in Medicine and Biology. 63, 19, 13 p., 195008.

First online real-time evaluation of motion-induced 4D dose errors during radiotherapy delivery

Ravkilde, T., Skouboe, S., Hansen, R., Worm, E. & Poulsen, P. R., Aug 2018, In: Medical Physics. 45, 8, p. 3893-3903 11 p.

Geometric and dosimetric comparison of four intrafraction motion adaptation strategies for stereotactic liver radiotherapy

Nankali, S., Worm, E. S., Hansen, R., Weber, B., Høyer, M., Zirak, A. & Poulsen, P. R., 16 Jul 2018, In: Physics in Medicine and Biology. 63, 14, 12 p., 145010.

A Prospective Cohort Study of Gated Stereotactic Liver Radiation Therapy Using Continuous Internal Electromagnetic Motion Monitoring

Worm, E. S., Høyer, M., Hansen, R., Larsen, L. P., Weber, B., Grau, C. & Poulsen, P. R., 1 Jun 2018, In: International Journal of Radiation Oncology, Biology, Physics. 101, 2, p. 366-375 10 p.

Electromagnetic-Guided MLC Tracking Radiation Therapy for Prostate Cancer Patients: Prospective Clinical Trial Results
Keall, P. J., Colvill, E., O'Brien, R., Caillet, V., Eade, T., Kneebone, A., Hruby, G., Poulsen, P. R., Zwan, B., Greer, P. B. & Booth, J., 1 Jun 2018, In: International Journal of Radiation Oncology, Biology, Physics. 101, 2, p. 387-395 9 p.

Potential improvements of lung and prostate MLC tracking investigated by treatment simulations
Toftegaard, J., Keall, P. J., O'Brien, R., Ruan, D., Ernst, F., Homma, N., Ichiji, K. & Poulsen, P. R., 1 May 2018, In: Medical Physics. 45, 5, p. 2218-2229 12 p.

The first clinical implementation of real-time image-guided adaptive radiotherapy using a standard linear accelerator
Keall, P. J., Nguyen, D. T., O'Brien, R., Caillet, V., Hewson, E., Poulsen, P. R., Bromley, R., Bell, L., Eade, T., Kneebone, A., Martin, J. & Booth, J. T., 1 Apr 2018, In: Radiotherapy and Oncology. 127, 1, p. 6-11 6 p.

Automatic online and real-time tumour motion monitoring during stereotactic liver treatments on a conventional linac by combined optical and sparse monoscopic imaging with kilovoltage x-rays (COSMIK)
Bertholet, J., Toftegaard, J., Hansen, R., Worm, E. S., Wan, H., Parikh, P. J., Weber, B., Hoyer, M. & Poulsen, P. R., 7 Mar 2018, In: Physics in Medicine and Biology. 63, 5, 055012.

Systematic intrafraction shifts of mediastinal lymph node targets between setup imaging and radiation treatment delivery in lung cancer patients
Schmidt, M. L., Hoffmann, L., Møller, D. S., Knap, M. M., Rasmussen, T. R., Folkersen, B. H. & Poulsen, P. R., 1 Feb 2018, In: Radiotherapy & Oncology. 126, 2, p. 318-324 7 p.

The accuracy and precision of Kilovoltage Intrafraction Monitoring (KIM) six degree-of-freedom prostate motion measurements during patient treatments
Kim, J. H., Nguyen, D. T., Booth, J. T., Huang, C. Y., Fuangrod, T., Poulsen, P., O'Brien, R., Caillet, V., Eade, T., Kneebone, A. & Keall, P., 1 Feb 2018, In: Radiotherapy and Oncology. 126, 2, p. 236-243 8 p.

Efficient Interplay Effect Mitigation for Proton Pencil Beam Scanning by Spot-Adapted Layered Repainting Evenly Spread out Over the Full Breathing Cycle
Poulsen, P. R., Eley, J., Langner, U., Simone, C. B. & Langen, K., 1 Jan 2018, In: International Journal of Radiation Oncology, Biology, Physics. 100, 1, p. 226-234 9 p.

An interdimensional correlation framework for real-time estimation of six degree of freedom target motion using a single x-ray imager during radiotherapy
Nguyen, D. T., Bertholet, J., Kim, J., O'Brien, R. T., Booth, J. T., Poulsen, P. R. & Keall, P. J., 2018, In: Physics in Medicine and Biology. 63, 1, 015010.

Rethink radiotherapy - BIGART 2017
Grau, C., Høyer, M., Poulsen, P. R., Muren, L. P., Korreman, S. S., Tanderup, K., Lindegaard, J. C., Alsner, J. & Overgaard, J., Nov 2017, In: Acta Oncologica. 56, 11, p. 1341-1352 12 p.

Simultaneous acquisition of 4D ultrasound and wireless electromagnetic tracking for in-vivo accuracy validation
Ipsen, S., Bruder, R., Worm, E. S., Hansen, R., Poulsen, P. R., Høyer, M. & Schweikard, A., 1 Sept 2017, In: Current Directions in Biomedical Engineering. 3, 2, p. 75-78 4 p.

Determining the mechanical properties of a radiochromic silicone-based 3D dosimeter
Kaplan, L. P., Høye, E. M., Balling, P., Muren, L. P., Petersen, J. B. B., Poulsen, P. R., Yates, E. S. & Skyt, P. S., 21 Jul 2017, In: Physics in Medicine and Biology. 62, 14, p. 5612-5622 11 p.

Quantifying the accuracy and precision of a novel real-time 6 degree-of-freedom kilovoltage intrafraction monitoring (KIM) target tracking system
Kim, J. H., Nguyen, D. T., Huang, C. Y., Fuangrod, T., Caillet, V., O'Brien, R., Poulsen, P., Booth, J. & Keall, P., 23 Jun 2017, In: Physics in Medicine and Biology. 62, 14, p. 5744-5759 16 p.

Cone beam CT-based set-up strategies with and without rotational correction for stereotactic body radiation therapy in the liver

Bertholet, J., Worm, E., Høyer, M. & Poulsen, P., Jun 2017, In: Acta Oncologica. 56, 6, p. 860-866 7 p.

Quantification of intrafraction prostate motion and its dosimetric effect on VMAT

Juneja, P., Colvill, E., Kneebone, A., Eade, T., Ng, J. A., Thwaites, D. I., Keall, P., Kaur, R., Poulsen, P. & Booth, J. T., Jun 2017, In: Australasian Physical & Engineering Sciences in Medicine. 40, 2, p. 317-324 8 p.

The first clinical implementation of a real-time six degree of freedom target tracking system during radiation therapy based on Kilovoltage Intrafraction Monitoring (KIM)

Nguyen, D. T., O'Brien, R., Kim, J. H., Huang, C. Y., Wilton, L., Greer, P. A., Legge, K., Booth, J. T., Poulsen, P. R., Martin, J. & Keall, P. J., 1 Apr 2017, In: Radiotherapy & Oncology. 123, 1, p. 37-42 6 p.

Target position uncertainty during visually guided deep-inspiration breath-hold radiotherapy in locally advanced lung cancer

Scherman Rydhög, J., Riisgaard de Blanck, S., Josipovic, M., Irming Jølck, R., Larsen, K. R., Clementsen, P., Lars Andersen, T., Poulsen, P. R., Fredberg Persson, G. & Munck Af Rosenschold, P., Apr 2017, In: Radiotherapy & Oncology. 123, 1, p. 78-84 7 p.

Stereotactic prostate adaptive radiotherapy utilising kilovoltage intrafraction monitoring: The TROG 15.01 SPARK trial

Keall, P., Nguyen, D. T., O'Brien, R., Booth, J., Greer, P., Poulsen, P., Gebiski, V., Kneebone, A. & Martin, J., 8 Mar 2017, In: BMC Cancer. 17, 1, 7 p., 180.

An experimentally validated couch and MLC tracking simulator used to investigate hybrid couch-MLC tracking

Toftegaard, J., Hansen, R., Ravkilde, T., Macek, K. & Poulsen, P. R., Mar 2017, In: Medical Physics. 44, 3, p. 798-809 12 p.

Fully automatic segmentation of arbitrarily shaped fiducial markers in cone-beam CT projections.

Bertholet, J., Wan, H., Toftegaard, J., Schmidt, M. L., Chotard, F., Parikh, P. J. & Poulsen, P. R., 21 Feb 2017, In: Physics in Medicine and Biology. 62, 4, p. 1327-1341 15 p., 1327.

Volumetric modulated arc therapy with dynamic collimator rotation for improved multileaf collimator tracking of the prostate

Murtaza, G., Toftegaard, J., Khan, E. U. & Poulsen, P. R., 1 Jan 2017, In: Radiotherapy & Oncology. 122, 1, p. 109-115 7 p.

Online 4D ultrasound guidance for real-time motion compensation by MLC tracking

Ipsen, S., Bruder, R., O'Brien, R., Keall, P. J., Schweikard, A. & Poulsen, P. R., 1 Oct 2016, In: Medical Physics. 43, 10, p. 5695-5704 10 p.

Cardiac and respiration induced motion of mediastinal lymph node targets in lung cancer patients throughout the radiotherapy treatment course

Schmidt, M. L., Hoffmann, L., Knap, M. M., Rasmussen, T. R., Folkersen, B. H., Toftegaard, J., Møller, D. S. & Poulsen, P. R., Oct 2016, In: Radiotherapy & Oncology. 121, 1, p. 52-58 7 p.

Fiducial marker guided stereotactic liver radiotherapy: Is a time delay between marker implantation and planning CT needed?

Worm, E. S., Bertholet, J., Høyer, M., Fledelius, W., Hansen, A. T., Larsen, L. P., Nielsen, J. E. & Poulsen, P. R., Oct 2016, In: Radiotherapy & Oncology. 121, 1, p. 75-78 4 p.

Reconstruction of implanted marker trajectories from cone-beam CT projection images using interdimensional correlation modeling

Chung, H., Poulsen, P. R., Keall, P. J., Cho, S. & Cho, B., 1 Aug 2016, In: Medical Physics. 43, 8, p. 4643-4654 12 p.

Cone-beam computed tomography internal motion tracking should be used to validate 4-dimensional computed tomography for abdominal radiation therapy patients

Rankine, L., Wan, H., Parikh, P., Maughan, N., Poulsen, P., DeWees, T., Klein, E. & Santanam, L., 1 Jun 2016, In: International Journal of Radiation Oncology, Biology, Physics. 95, 2, p. 818-826 9 p.

Time-Resolved Intrafraction Target Translations and Rotations During Stereotactic Liver Radiation Therapy: Implications for Marker-based Localization Accuracy

Bertholet, J., Worm, E. S., Fledelius, W., Høyer, M. & Poulsen, P. R., 1 Jun 2016, In: International Journal of Radiation Oncology, Biology, Physics. 95, 2, p. 802-9 8 p.

Electromagnetic guided couch and multileaf collimator tracking on a TrueBeam accelerator

Hansen, R., Ravkilde, T., Worm, E. S., Toftegaard, J., Grau, C., Macek, K. & Poulsen, P. R., 1 May 2016, In: Medical Physics. 43, 5, p. 2387-2398 12 p.

Real-Time 3D Image Guidance Using a Standard LINAC: Measured Motion, Accuracy, and Precision of the First Prospective Clinical Trial of Kilovoltage Intrafraction Monitoring-Guided Gating for Prostate Cancer Radiation Therapy

Keall, P. J., Ng, J. A., Juneja, P., O'Brien, R. T., Huang, C.-Y., Colvill, E., Caillet, V., Simpson, E., Poulsen, P. R., Kneebone, A., Eade, T. & Booth, J. T., 1 Apr 2016, In: International Journal of Radiation Oncology, Biology, Physics. 94, 5, p. 1015-21 7 p.

A dosimetric comparison of real-time adaptive and non-adaptive radiotherapy: A multi-institutional study encompassing robotic, gimbaled, multileaf collimator and couch tracking: A multi-institutional study encompassing robotic, gimbaled, multileaf collimator and couch tracking

Colvill, E., Booth, J., Nill, S., Fast, M., Bedford, J., Oelfke, U., Nakamura, M., Poulsen, P., Worm, E., Hansen, R., Ravkilde, T., Scherman Rydhög, J., Pommer, T., Munck Af Rosenschold, P., Lang, S., Guckenberger, M., Groh, C., Herrmann, C., Verellen, D. & Poels, K. & 5 others, Wang, L., Hadsell, M., Sothmann, T., Blanck, O. & Keall, P., Apr 2016, In: Radiotherapy & Oncology. 119, 1, p. 159-65 7 p.

Automated patient setup and gating using cone beam computed tomography projections

Wan, H., Bertholet, J., Ge, J., Poulsen, P. & Parikh, P., 21 Mar 2016, In: Physics in Medicine and Biology. 61, 6, p. 2552-61 10 p.

Setup error and motion during deep inspiration breath-hold breast radiotherapy measured with continuous portal imaging

Lutz, C. M., Poulsen, P. R., Fledelius, W., Offersen, B. V. & Thomsen, M. S., 2016, In: Acta Oncologica. 55, 2, p. 193-200 8 p.

Improved quality of intrafraction kilovoltage images by triggered readout of unexposed frames

Poulsen, P. R., Jonassen, J., Schmidt, M. L. & Jensen, C., 1 Nov 2015, In: Medical Physics. 42, 11, p. 6549-6557 9 p.

Respiratory gating based on internal electromagnetic motion monitoring during stereotactic liver radiation therapy: First results

Poulsen, P. R., Worm, E. S., Hansen, R., Larsen, L. P. S., Grau, C. & Høyer, M., Oct 2015, In: Acta Oncologica. 54, 9, p. 1445-52 8 p.

Multileaf Collimator Tracking Improves Dose Delivery for Prostate Cancer Radiation Therapy: Results of the First Clinical Trial

Colvill, E., Booth, J. T., O'Brien, R. T., Eade, T. N., Kneebone, A. B., Poulsen, P. R. & Keall, P. J., 1 Aug 2015, In: International Journal of Radiation Oncology, Biology, Physics. 92, 5, p. 1141-7 7 p.

Determining appropriate imaging parameters for kilovoltage intrafraction monitoring: an experimental phantom study

Wallace, D., Ng, J. A., Keall, P. J., O'Brien, R. T., Poulsen, P. R., Juneja, P. & Booth, J. T., 21 Jun 2015, In: Physics in Medicine and Biology. 60, 12, p. 4835-47 13 p.

The first clinical treatment with kilovoltage intrafraction monitoring (KIM): A real-time image guidance method

Keall, P. J., Aun Ng, J., O'Brien, R., Colvill, E., Huang, C. Y., Poulsen, P. R., Fledelius, W., Juneja, P., Simpson, E., Bell, L., Alfieri, F., Eade, T., Kneebone, A. & Booth, J. T., 1 Jan 2015, In: Medical Physics. 42, 1, p. 354-358 5 p.

Fast motion-including dose error reconstruction for VMAT with and without MLC tracking

Ravkilde, T., Keall, P. J., Grau, C., Høyer, M. & Poulsen, P. R., 7 Dec 2014, In: Physics in Medicine and Biology. 59, 23, p. 7279-7296 18 p.

Moving metal artifact reduction in cone-beam CT scans with implanted cylindrical gold markers

Toftgaard, J., Fledelius, W., Seghers, D., Huber, M., Brehm, M., Worm, E. S., Elstrøm, U. V. & Poulsen, P. R., Dec 2014, In: Medical Physics. 41, 12, p. 121710

Challenges of radiotherapy: Report on the 4D treatment planning workshop 2013

Knopf, A., Nill, S., Yohannes, I., Graeff, C., Dowdell, S., Kurz, C., Sonke, J.-J., Biegun, A. K., Lang, S., McClelland, J., Champion, B., Fast, M., Wölfelschneider, J., Gianoli, C., Rucinski, A., Baroni, G., Richter, C., van de Water, S., Grassberger, C. & Weber, D. & 3 others, Poulsen, P. R., Shimizu, S. & Bert, C., Nov 2014, In: Physica Medica. 30, 7, p. 809-15 7 p.

Quality assurance for the clinical implementation of kilovoltage intrafraction monitoring for prostate cancer VMAT

Ng, J. A., Booth, J. T., O'Brien, R. T., Colvill, E., Huang, C. Y., Poulsen, P. R. & Keall, P. J., 21 Oct 2014, In: Medical Physics. 41, 11, 9 p., 111712.

DMLC tracking and gating can improve dose coverage for prostate VMAT

Colvill, E., Poulsen, P. R., Booth, J. T., O'Brien, R. T., Ng, J. A. & Keall, P. J., Sept 2014, In: Medical Physics. 41, 9, 10 p., 091705.

A method for selection of beam angles robust to intra-fractional motion in proton therapy of lung cancer

Casares-Magaz, O., Toftgaard, J., Muren, L. P., Kallehauge, J. F., Bassler, N., Poulsen, P. R. & Petersen, J. B. B., Aug 2014, In: Acta Oncologica. 53, 8, p. 1058-63 6 p.

Kilovoltage intrafraction motion monitoring and target dose reconstruction for stereotactic volumetric modulated arc therapy of tumors in the liver

Poulsen, P. R., Worm, E. S., Petersen, J. B. B., Grau, C., Fledelius, W. & Høyer, M., 2 Jul 2014, In: Radiotherapy & Oncology.

Clinical use of iterative 4D-cone beam computed tomography reconstructions to investigate respiratory tumor motion in lung cancer patients

Schmidt, M. L., Poulsen, P. R., Toftgaard, J., Hoffmann, L., Hansen, D. & Sørensen, T. S., 24 Jun 2014, In: Acta Oncologica. 53, 8, p. 1107-1113 7 p.

Real-time segmentation of multiple implanted cylindrical liver markers in kilovoltage and megavoltage x-ray images

Fledelius, W., Worm, E. S., Høyer, M., Grau, C. & Poulsen, P. R., 7 Jun 2014, In: Physics in Medicine and Biology. 59, 11, p. 2787-2800 14 p.

Inter- and intra-fraction geometric errors in daily image-guided radiotherapy of free-breathing breast cancer patients measured with continuous portal imaging

Thomsen, M. S., Harrov, U., Fledelius, W. & Poulsen, P. R., Jun 2014, In: Acta Oncologica. 53, 6, p. 802-8 7 p.

Three-dimensional liver motion tracking using real-time two-dimensional MRI

Brix, L., Ringgaard, S., Sørensen, T. S. & Poulsen, P. R., Apr 2014, In: Medical Physics. 41, 4, 10 p., 042302.

The first clinical implementation of electromagnetic transponder-guided MLC tracking

Keall, P. J., Colvill, E., O'Brien, R., Ng, J. A., Poulsen, P. R., Eade, T., Kneebone, A. & Booth, J. T., Feb 2014, In: Medical Physics. 41, 2, 5 p., 020702.

Motion management during IMAT treatment of mobile lung tumors-A comparison of MLC tracking and gated delivery

Falk, M., Pommer, T., Keall, P., Korremann, S. S., Persson, G., Poulsen, P. R. & Munck Af Rosenschöld, P., 2014, In: Medical Physics. 41, 10, 8 p., 101707.

Real-time estimation of prostate tumor rotation and translation with a kV imaging system based on an iterative closest point algorithm

Tehrani, J. N., O'Brien, R. T., Poulsen, P. R. & Keall, P., 7 Dec 2013, In: Physics in Medicine and Biology. 58, 23, p. 8517-8533 17 p.

Registration-based Reconstruction of Four-dimensional Cone Beam Computed Tomography

Christoffersen, C., Hansen, D. C., Poulsen, P. R. & Sørensen, T. S., Nov 2013, In: I E E E Transactions on Medical Imaging. 32, 11, p. 2064 - 2077 14 p.

The impact of leaf width and plan complexity on DMLC tracking of prostate intensity modulated arc therapy

Pommer, T., Falk, M., Poulsen, P. R., Keall, P. J., O'Brien, R. T. & Munck Af Rosenschöld, P., Nov 2013, In: Medical Physics. 40, 11, 111717.

Time-resolved dose distributions to moving targets during volumetric modulated arc therapy with and without dynamic MLC tracking

Ravkilde, T., Keall, P. J., Grau, C., Høyer, M. & Poulsen, P. R., Nov 2013, In: Medical Physics. 40, 11, 111723.

Dosimetric impact of respiratory motion, interfraction baseline shifts, and anatomical changes in radiotherapy of non-small cell lung cancer

Schmidt, M. L., Hoffmann, L., Kandi, M., Møller, D. S. & Poulsen, P. R., Oct 2013, In: Acta Oncologica. 52, 7, p. 1490-1496 7 p.

Dosimetric verification of complex radiotherapy with a 3D optically based dosimetry system: Dose painting and target tracking

Skyt, P. S., Petersen, J. B. B., Yates, E. S., Poulsen, P. R., Ravkilde, T. L., Balling, P. & Muren, L. P., Oct 2013, In: Acta Oncologica. 52, 7, p. 1445-50 6 p.

Variations in magnitude and directionality of respiratory target motion throughout full treatment courses of stereotactic body radiotherapy for tumors in the liver

Worm, E. S., Høyer, M., Fledelius, W., Hansen, A. T. & Poulsen, P. R., Oct 2013, In: Acta Oncologica. 52, 7, p. 1437-1444 8 p.

Estimation of effective imaging dose for kilovoltage intratreatment monitoring of the prostate position during cancer radiotherapy

Ng, J. A., Booth, J., Poulsen, P. R., Kuncic, Z. & Keall, P. J., 7 Sept 2013, In: Physics in Medicine and Biology. 58, 17, p. 5983-96 14 p.

Three-dimensional, Time-Resolved, Intrafraction Motion Monitoring Throughout Stereotactic Liver Radiation Therapy on a Conventional Linear Accelerator

Worm, E. S., Høyer, M., Fledelius, W. & Poulsen, P. R., 1 May 2013, In: International Journal of Radiation Oncology, Biology, Physics. 86, 1, p. 190-197 8 p.

Dosimetric benefit of DMLC tracking for conventional and sub-volume boosted prostate intensity-modulated arc radiotherapy

Pommer, T., Falk, M., Poulsen, P. R., Keall, P. J., O'Brien, R. T., Petersen, P. M. & Munck af Rosenschöld, P., 7 Apr 2013, In: Physics in Medicine and Biology. 58, 7, p. 2349-61 13 p.

Time-resolved dose reconstruction by motion encoding of volumetric modulated arc therapy fields delivered with and without dynamic multi-leaf collimator tracking

Ravkilde, T., Keall, P. J., Grau, C., Høyer, M. & Poulsen, P. R., 2013, In: Acta Oncologica. 52, 7, p. 1497-1503 9 p.

Experimental investigation of a general real-time 3D target localization method using sequential kV imaging combined with respiratory monitoring

Cho, B., Poulsen, P. R., Ruan, D., Sawant, A. & Keall, P. J., 21 Nov 2012, In: Physics in Medicine and Biology. 57, 22, p. 7395-7407 13 p.

Megavoltage Image-Based Dynamic Multileaf Collimator Tracking of a NiTi Stent in Porcine Lungs on a Linear Accelerator
Poulsen, P. R., Carl, J., Nielsen, J., Nielsen, M. S., Borup Thomsen, J., Jensen, H. K., Kjærgaard, B., Rose Zepernick, P., Worm, E., Fledelius, W., Cho, B., Sawant, A., Ruan, D. & Keall, P. J., 1 Feb 2012, In: International Journal of Radiation Oncology, Biology, Physics. 82, 2, p. e321-e327 7 p.

A method of dose reconstruction for moving targets compatible with dynamic treatments

Poulsen, P. R., Schmidt, M. L., Keall, P., Worm, E. S., Fledelius, W. & Hoffmann, L., 2012, In: Medical Physics. 39, 10, p. 6237-6246 10 p.

Image-based dynamic multileaf collimator tracking of moving targets during intensity-modulated arc therapy

Poulsen, P. R., Fledelius, W., Cho, B. & Keall, P., 2012, In: International Journal of Radiation Oncology, Biology, Physics. 83, 2, p. e265-71

Kilovoltage Intrafraction Monitoring for Prostate Intensity Modulated Arc Therapy: First Clinical Results

Ng, J. A., Booth, J. T., Poulsen, P. R., Fledelius, W., Worm, E. S., Eade, T., Hegi, F., Kneebone, A., Kuncic, Z. & Keall, P. J., 2012, In: International Journal of Radiation Oncology, Biology, Physics. 84, 5, p. e655-61 7 p.

On-line use of three-dimensional marker trajectory estimation from cone-beam computed tomography projections for precise setup in radiotherapy for targets with respiratory motion

Worm, E. S., Høyer, M., Fledelius, W., Nielsen, J. E., Larsen, L. P. & Poulsen, P. R., 2012, In: International Journal of Radiation Oncology, Biology, Physics. 83, 1, p. e145-51

The dosimetric impact of inversely optimized arc radiotherapy plan modulation for real-time dynamic MLC tracking delivery

Falk, M., Larsson, T., Keall, P., Chul Cho, B., Aznar, M., Korreman, S. S., Poulsen, P. R. & Af Rosenschold, P. M., 2012, In: Medical Physics. 39, 3, p. 1588-94 7 p.

A method to estimate 3D abdominal and thoracic tumor position to submillimeter accuracy using sequential x-ray imaging and respiratory monitoring

Cho, B. (Inventor), Poulsen, P. R. (Inventor) & Keall, P. (Inventor), 29 Sept 2011, Patent No. US 8396270 B2, 12 Mar 2013

Clinical validation of a 4D-CT based method for lung ventilation measurement in phantoms and patients

Nyeng, T. B., Kallehauge, J. F., Høyer, M., Petersen, J. B. B., Poulsen, P. R. & Muren, L. P., Aug 2011, In: Acta Oncologica. 50, 6, p. 897-907 11 p.

Electromagnetic-guided dynamic multileaf collimator tracking enables motion management for intensity-modulated arc therapy

Keall, P. J., Sawant, A., Cho, B., Ruan, D., Wu, J., Poulsen, P. R., Petersen, J., Newell, L. J., Cattell, H. & Korreman, S., 1 Jan 2011, In: International Journal of Radiation Oncology, Biology, Physics. 79, 1, p. 312-20 9 p.

Real-time target position estimation using stereoscopic kilovoltage/megavoltage imaging and external respiratory monitoring for dynamic multileaf collimator tracking

Cho, B., Poulsen, P. R., Sawant, A., Ruan, D. & Keall, P. J., 1 Jan 2011, In: International Journal of Radiation Oncology, Biology, Physics. 79, 1, p. 269-78 10 p.

SU-C-224-01: 3D Dosimetry with Gels and Optical Tomography of Dynamic MLC Tracking Based on an Electromagnetic Transponder System

Skyt, P., Poulsen, P., Kinnari, T., Wahlstedt, I., Ravkilde, T., Keall, P., Petersen, J., Balling, P. & Muren, L., 1 Jan 2011, In: Medical Physics. 38, 6, 1 p.

A method for robust segmentation of arbitrarily shaped radiopaque structures in cone-beam CT projections

Poulsen, P. R., Fledelius, W., Keall, P. J., Weiss, E., Lu, J., Brackbill, E. & Hugo, G. D., 2011, In: Medical Physics. 38, 4, p. 2151-6 6 p.

Geometric accuracy of dynamic MLC tracking with an implantable wired electromagnetic transponder

Ravkilde, T., Keall, P. J., Højbjerg, K., Fledelius, W., Worm, E. & Poulsen, P. R., 2011, In: Acta Oncologica. 50, 6, p. 944-51 8 p.

Robust automatic segmentation of multiple implanted cylindrical gold fiducial markers in cone-beam CT projections

Fledelius, W., Worm, E. S., Elstrøm, U. V., Petersen, J. B. B., Grau, C., Høyer, M. & Poulsen, P. R., 2011, In: Medical Physics. 38, 12, p. 6351

Tracking latency in image-based dynamic MLC tracking with direct image access

Fledelius, W., Keall, P. J., Cho, B., Yang, X., Morf, D., Scheib, S. & Poulsen, P. R., 2011, In: Acta Oncologica. 50, 6, p. 952-9 8 p.

Dynamic MLC tracking of moving targets with a single kV imager for 3D conformal and IMRT treatments

Poulsen, P. R., Cho, B., Sawant, A., Ruan, D. & Keall, P. J., 1 Oct 2010, In: Acta Oncologica. 49, 7, p. 1092-100 9 p.

Detailed analysis of latencies in image-based dynamic MLC tracking

Poulsen, P. R., Cho, B., Sawant, A., Ruan, D. & Keall, P. J., 1 Sept 2010, In: Medical Physics. 37, 9, p. 4998-5005 8 p.

Method to estimate position, motion and trajectory of a target with a single x-ray imager

Poulsen, P. R. (Inventor), Cho, B. (Inventor), Langen, K. (Inventor), Kupelian, P. (Inventor) & Keall, P. (Inventor), 8 Jul 2010, IPC No. 8379794, Patent No. US2010172469, 19 Feb 2013

Real-time tumor tracking using sequential kV imaging combined with respiratory monitoring: a general framework applicable to commonly used IGRT systems

Cho, B., Poulsen, P. R. & Keall, P. J., 21 Jun 2010, In: Physics in Medicine and Biology. 55, 12, p. 3299-316 18 p.

Dynamic multileaf collimator tracking of respiratory target motion based on a single kilovoltage imager during arc radiotherapy

Poulsen, P. R., Cho, B., Ruan, D., Sawant, A. & Keall, P. J., 1 Jun 2010, In: International Journal of Radiation Oncology, Biology, Physics. 77, 2, p. 600-7 8 p.

Implementation of a new method for dynamic multileaf collimator tracking of prostate motion in arc radiotherapy using a single kV imager

Poulsen, P. R., Cho, B., Sawant, A. & Keall, P. J., 1 Mar 2010, In: International Journal of Radiation Oncology, Biology, Physics. 76, 3, p. 914-23 10 p.

Real-time dynamic MLC tracking for inversely optimized arc radiotherapy

Falk, M., af Rosenschöld, P. M., Keall, P., Cattell, H., Cho, B. C., Poulsen, P. R., Povzner, S., Sawant, A., Zimmerman, J. & Korreman, S., 1 Feb 2010, In: Radiotherapy & Oncology. 94, 2, p. 218-23 6 p.

First demonstration of combined kV/MV image-guided real-time dynamic multileaf-collimator target tracking

Cho, B., Poulsen, P. R., Sloutsky, A., Sawant, A. & Keall, P. J., 2009, In: International Journal of Radiation Oncology, Biology, Physics. 74, 3, p. 859-67 8 p.

Integration of real-time internal electromagnetic position monitoring coupled with dynamic multileaf collimator tracking: an intensity-modulated radiation therapy feasibility study

Smith, R. L., Sawant, A., Santanam, L., Venkat, R. B., Newell, L. J., Cho, B.-C., Poulsen, P., Catell, H., Keall, P. J. & Parikh, P. J., 2009, In: International Journal of Radiation Oncology, Biology, Physics. 74, 3, p. 868-75 7 p.

Real-time prostate trajectory estimation with a single imager in arc radiotherapy: a simulation study

Poulsen, P. R., Cho, B. & Keall, P. J., 2009, In: Physics in Medicine and Biology. 54, 13, p. 4019-35 16 p.

Toward submillimeter accuracy in the management of intrafraction motion: the integration of real-time internal position monitoring and multileaf collimator target tracking

Sawant, A., Smith, R. L., Venkat, R. B., Santanam, L., Cho, B., Poulsen, P., Cattell, H., Newell, L. J., Parikh, P. & Keall, P. J., 2009, In: International Journal of Radiation Oncology, Biology, Physics. 74, 2, p. 575-82 7 p.

A method to estimate mean position, motion magnitude, motion correlation, and trajectory of a tumor from cone-beam CT projections for image-guided radiotherapy

Poulsen, P. R., Cho, B. & Keall, P. J., 1 Dec 2008, In: International Journal of Radiation Oncology, Biology, Physics. 72, 5, p. 1587-96 10 p.

Three-dimensional prostate position estimation with a single x-ray imager utilizing the spatial probability density

Poulsen, P. R., Cho, B., Langen, K., Kupelian, P. & Keall, P. J., 21 Aug 2008, In: Physics in Medicine and Biology. 53, 16, p. 4331-53 23 p.

Intrafraction changes of prostate position and geometrical errors studied by continuous electronic portal imaging

Månsson Haskå, T., Honoré, H. H., Muren, L., Høyer, M. & Poulsen, P. R., 2008, In: Acta Oncologica. 47, 7, p. 1351-1357 6 p.

Residual set-up errors and margins in on-line image-guided prostate localization in radiotherapy

Poulsen, P. R., Muren, L. & Høyer, M., Nov 2007, In: Radiotherapy & Oncology. 85, 2, p. 201-206 6 p.

Accuracy of image-guided radiotherapy of prostate cancer based on the BeamCath urethral catheter technique.

Poulsen, P. R., Fokdal, L., Petersen, J. B. B. & Høyer, M., Apr 2007, In: Radiotherapy & Oncology. 83, 1, p. 25-30 5 p.

Accuracy of Prostate Localization using Implanted Gold Markers and Varian's On-Board Image System

Poulsen, P. R., Honoré, H. H. & Høyer, M., Oct 2006, *Ikke angivet*. Suppl 1 ed. Radiother Oncol, p. 145

Intra- and Interfractional Movements of the BeamCath Urethral Catheter for Image-Guided Radiotherapy of Prostate Cancer

Honoré, H. H., Poulsen, P. R. & Høyer, M., 2006, *Ikke angivet*. Suppl 1 ed. Radiother Oncol, Vol. 81. p. 223

Gold nanoparticle single electron transistor with carbon nanotube leads

Thelander, C., Magnusson, M. H., Deppert, K., Samuelson, L., Poulsen, P. R., Nygård, J. & Borggreen, J., 24 Sept 2001, In: Applied Physics Letters. 79, 13, p. 2106-2108 3 p.

Comparative study of the structural properties of nanocrystalline Ge:H plasma deposited onto the cathode and the anode using high hydrogen dilutions

Poulsen, P. R., Wang, M., Jun, X., Li, W., Chen, K., Wang, G. & Feng, D., 1 Jun 1999, In: Thin Solid Films. 346, 1, p. 91-95 5 p.

Role of hydrogen surface coverage during anodic plasma deposition of hydrogenated nanocrystalline germanium

Poulsen, P. R., Wang, M., Xu, J., Li, W., Chen, K., Wang, G. & Feng, D., 15 Sept 1998, In: Journal of Applied Physics. 84, 6, p. 3386-3391 6 p.

Self-organization of Te clusters in nanofilm by low energy beam deposition

Chen, P. P., Wang, Z. Y., Yu, S. W., Hong, J. M., Poulsen, P. R., Ji, Y. L., Miao, B. Y., Han, M. & Wang, G. H., Jul 1998, In: Physics Letters, Section A: General, Atomic and Solid State Physics. 244, 5, p. 407-412 6 p.

Visible photoluminescence from the nanophase film prepared by Ge-Al co-evaporation

Miao, B., Chen, P., Hong, J., Poulsen, P., Yuan, X. & Wang, G., 20 Apr 1998, In: Physics Letters, Section A: General, Atomic and Solid State Physics. 241, 1-2, p. 115-118 4 p.

Activities

Stanford University

Poulsen, P. R. (Visiting researcher)

18 Dec 2006 → ...

University of Copenhagen

Poulsen, P. R. (Visiting researcher)

2 Nov 2006 → ...

Press clippings