

## A Peer-reviewed scientific articles

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3. Latva-Äijö SM, Zanetti F, Honkanen AP, Huotari S, Lassas M and Siltanen S **2024**, *Inner product regularized multi-energy X-ray tomography for material decomposition*. Applied Mathematics for Modern Challenges 2(1): pp. 1–16
4. Rautio S, Murthy R, Bubba TA, Lassas M and Siltanen S **2024**, *Learning a microlocal prior for limited-angle tomography*. IMA Journal of Applied Mathematics 88(6): pp. 888–916,
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7. Kekkonen H, Lassas M, Saksman E and Siltanen S **2023**, *Random tree Besov priors—Towards fractal imaging*. Inverse Problems and Imaging 17(2): pp. 507–531
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13. Virta R, Bubba TA, Moring M, Siltanen S, Honkamaa T and Dendooven P **2022**, *Improved Passive Gamma Emission Tomography image quality in the central region of spent nuclear fuel*. Scientific Reports, 12(1), 12473.
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## B Non-refereed scientific articles

1. Isaacson D, Jennifer LM and Siltanen S **2021**, D-bar Methods for EIT. Chapter in the book Electrical Impedance Tomography. CRC Press, 2021, pp. 137-150.
2. Siltanen S **2012**, Electrical impedance imaging using nonlinear Fourier transform. Oberwolfach Reports 11/2012.
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## C Scientific monographs, special issues

Mueller J L and Siltanen S 2012: *Linear and Nonlinear Inverse Problems with Practical Applications*, SIAM Computational Science and Engineering 10.

- E1. Moura F, Siltanen S and Juvonen M (eds.) **2023** Special issue on Helsinki Deblur Challenge 2021 of *Inverse Problems and Imaging* (Volume 17, Number 5)
- E2. Hamilton S, Knudsen K, Siltanen S and Uhlmann G (eds.) **2014** Special issue on complex geometrical optics solutions of *Inverse Problems and Imaging* (Volume 8, Number 4)
- E3. Lassas M and Siltanen S (eds.) **2013** Special Issue on Inverse Problems in Mathematical Biology of *Journal of Mathematical Biology* (Volume 67, Issue 1)
- E4. Isaacson D, Mueller J L and Siltanen S (eds.) **2004**: Special issue on electrical impedance tomography of *Physiological Measurement*, Vol. **24**

## D Publications for professional communities

Siltanen S 2024: *Successes, Collaborations, and Forward Momentum for Inverse Problems in Finland*, SIAM News **57**(10). [Link](#)

Siltanen S and Virta R 2020: *Gamma emission tomography reveals the content of spent nuclear fuel assemblies (in Finnish)*, Finnish Nuclear Society's journal "ATS Ydintekniikka" 4/2020.

## E Publications intended for the general public

1. Siltanen S 2021, *Step Into the World of Mathematics*, Springer. The first popular-science book written by a Finnish mathematician and translated.
2. Siltanen S 2019, *Astu matematiikan maailmaan* (book in Finnish), Otava
3. Siltanen S 2015, *Synthesizing Speech*. Physics World 28(1), pp. 28–32.
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## G Theses

Siltanen S **1999** *Electrical Impedance Tomography and Faddeev's Green functions*. Annales Academiæ Scientiarum Fennicæ Mathematica Dissertationes 121. PhD thesis.

## H Patents and invention disclosures

- P1. Kalke M, Suuronen E, Siltanen S and Setälä Henri **2009**, Method and system for determining a sharp panoramic image constructed from a group of projection images, Finnish patent 119080.
- P2. Kaipio J, Siltanen S, Kalke M, Kolehmainen V and Lassas M **2007**, Method and arrangement for three-dimensional medical X-ray imaging, United States patent 7274766.
- P3. Kalke M, Siltanen S, Vänskä S, Lassas M and Rantala M **2007**, *Method and arrangement for multiresolutive reconstruction for medical X-ray imaging*. United States patent 7215730.
- P4. Siltanen S **2007**, *Method and arrangement for enhanced detection of breast cancer*. Finnish patent 117744.
- P5. Kaipio J L, Kolehmainen V, Lassas M, Siltanen S, Somersalo E **2005**, *Method and arrangement for three-dimensional medical X-ray imaging*. Finnish patent 116750.

## I Audiovisual material, ICT software

- Over 200 popular-science videos published at my YouTube channel *Samun tiedekanava*, TikTok account @samuntiede, and Instagram account @samuntiede, with over million views in total.
- Lecture videos published at my YouTube channel [Professor Sam](#).
- Open scientific software published at <https://github.com/ssiltane>

- Producer of open data challenges Helsinki Speech Challenge 2024 (<https://blogs.helsinki.fi/helsinki-speech-challenge/>), Helsinki Tomography Challenge 2022 (<https://www.fips.fi/HTC2022.php>), and Helsinki Deblur Challenge 2021 (<https://www.fips.fi/HDC2021.php>).
- Producer of the open datasets in <https://www.fips.fi/datasetpage.php>