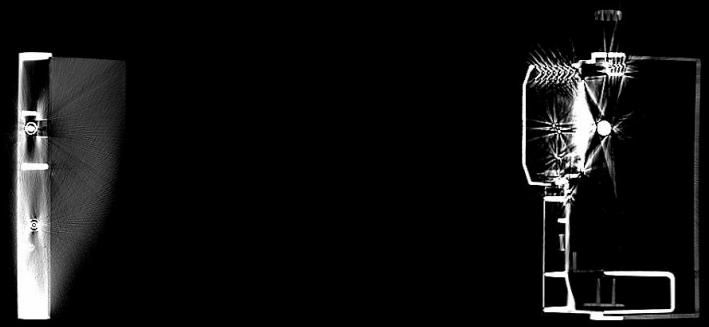
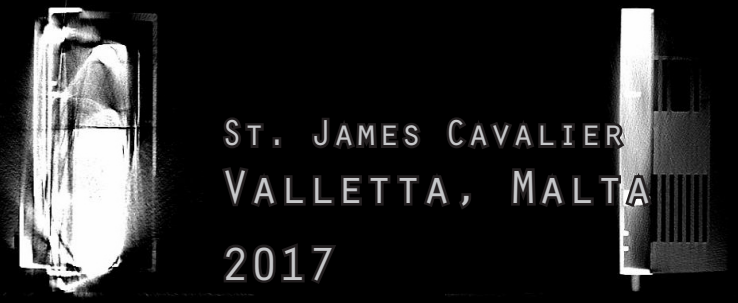


CT in Art

Zsolt GYENES

HABIL DLA

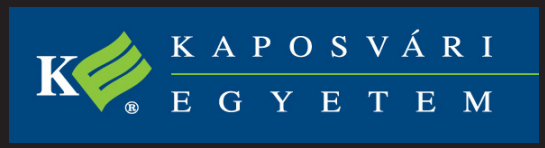


St. James Cavalier

Valletta, Malta

2017

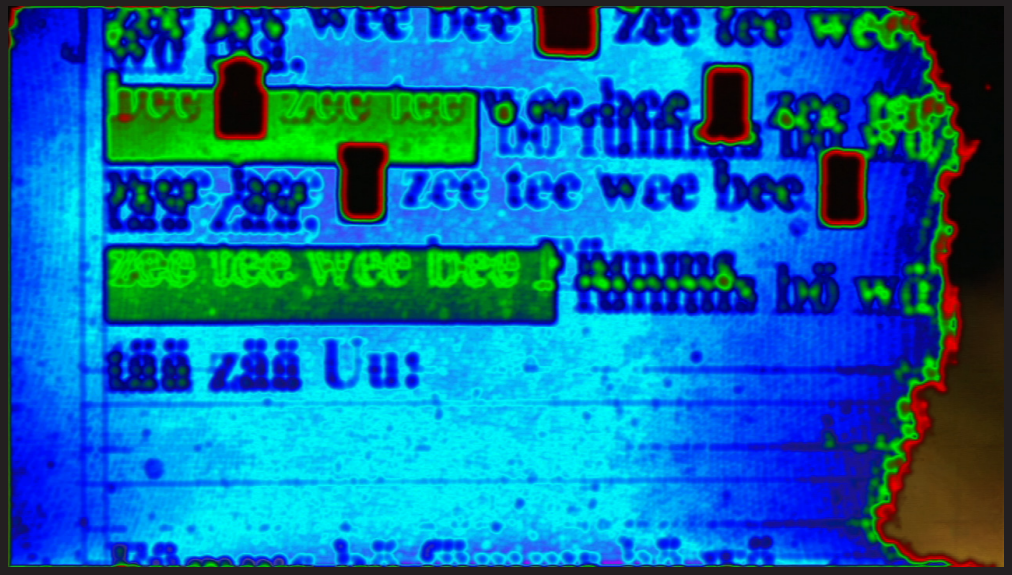
The project is supported by



Works of art by Zsolt Gyenes

Time based works:
Audio-videos, CT animations,
Sound textures

Stills:
Digital still pictures (Electrography),
Photography



1. part

Against the apparatus

The (experimental) artists are consciously looking for possibilities to make the program fail. Their aim in doing so is to highlight the significant features; to ask the fundamental questions.

So they play against the apparatus / medium.

What is art/ificial is constantly laden with errors, which create part of the creative method. In this aspect errors include the loop, a video with an abstract world of images, or rather unorthodox uses of software.

The eight varieties of photographic vision by László Moholy-Nagy

1. Abstract seeing
2. Exact seeing
3. Rapid seeing
4. Slow seeing
5. Intensified seeing
6. Penetrative seeing by means of x-rays; radiography.
7. Simultaneous seeing
8. Distorted seeing

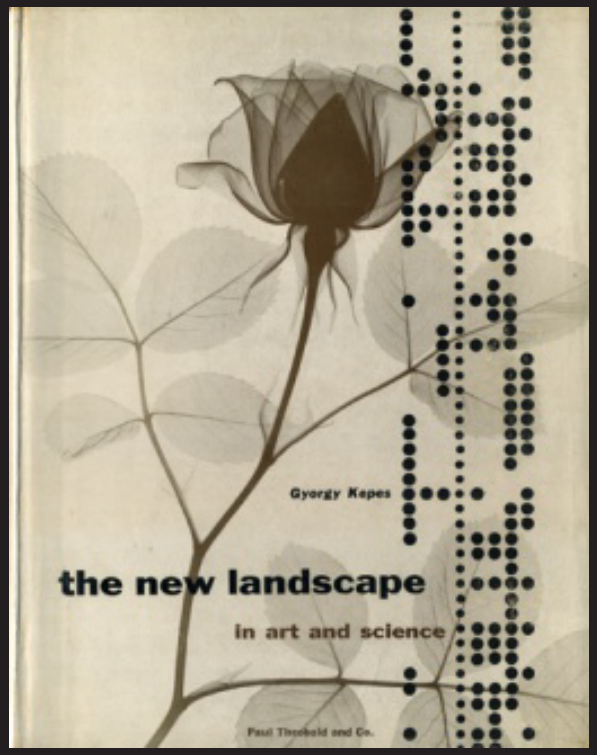
X-ray / radiography penetrates and records the inside of objects, etc.

L. Moholy-Nagy: Malerei, Photographie, Film (Munich, 1925) and Vision in Motion, Paul Theobald, Chicago, 1947, 206-208 pp.

One of the disciple of Moholy-Nagy was (the also Hungarian) György (George) Kepes.

“X-ray photography opened up a new aspect of the visible world. Things hitherto hidden from the human eye could be penetrated and made visible. Here the transparency has a new meaning, because the depth of the object is also evaluated by its optical density.”

Gyorgy Kepes: Language of Vision, Paul Theobald and Company, Chicago, 1944/1969, 80. p..



Gyorgy Kepes: The New Landscape in Art and Science, Paul Theobald, 1956.

CT and MRI technologies

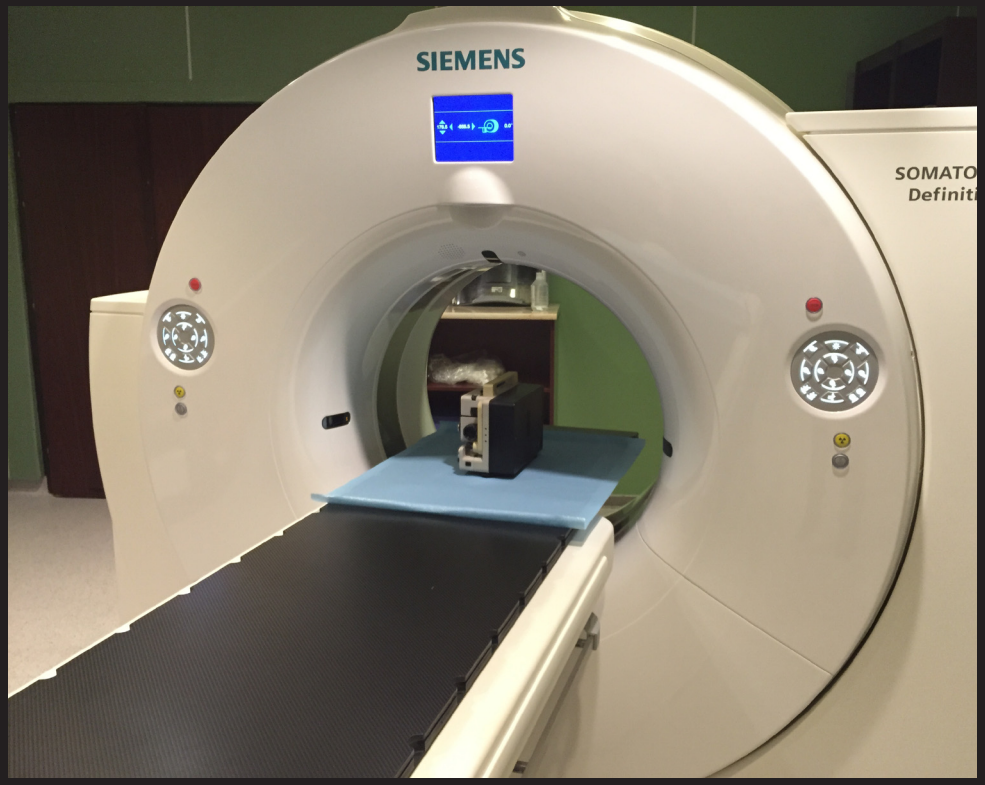
Computed Tomography (CT)

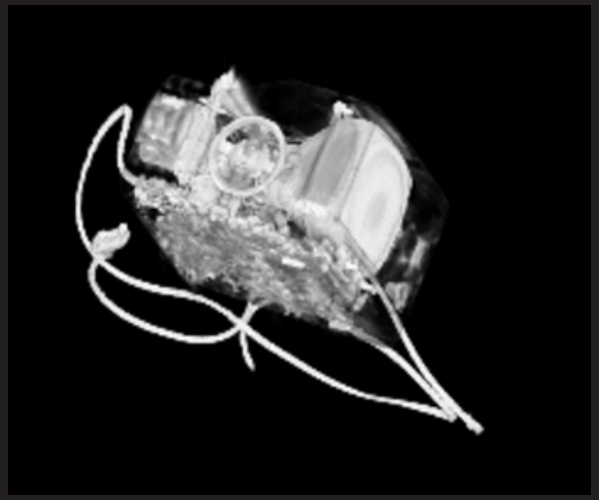
A method of producing (usually) a three-dimensional image of an internal body structure by computerized combination of two-dimensional cross-sectional X-ray images.

https://www.merriam-webster.com/dictionary/computed%20tomography#medicalDictionary (12. 01. 2017)

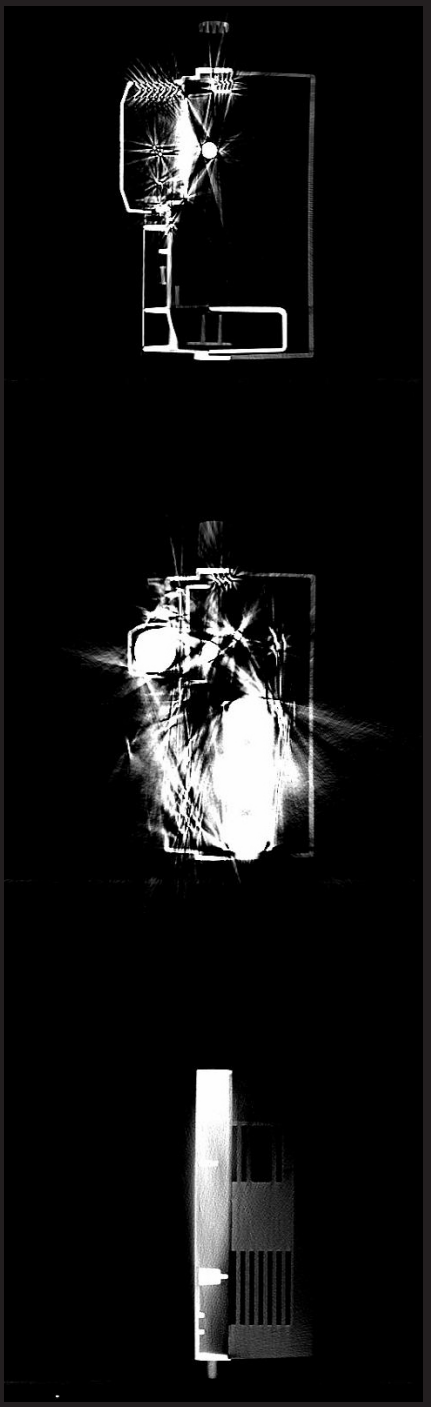
The tomograms ("slices") for CT can be created as thin as one millimeter or less. Images can be displayed in numerous display planes, and can also be displayed as 3-D images.

http://www.medicinenet.com/script/main/art.asp?articlekey=2878 (12. 01. 2017)



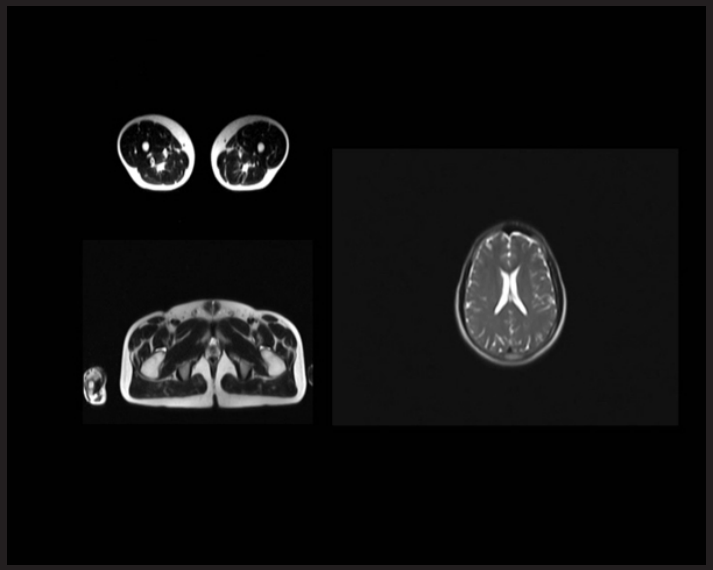


The CT-scans of my works of art were taken in the Health Center of Kaposvar University.



Magnetic resonance imaging (MRI) is a medical imaging technique used in radiology to form pictures of the anatomy and the physiological processes of the body in both health and disease.
Whereas CT uses higher-energy X-rays with known harmful effects, MRI operates in the radio-frequency portion of the spectrum where there is much less evidence of harm.
MRI-scans essentially map the location of water and fat in the body.

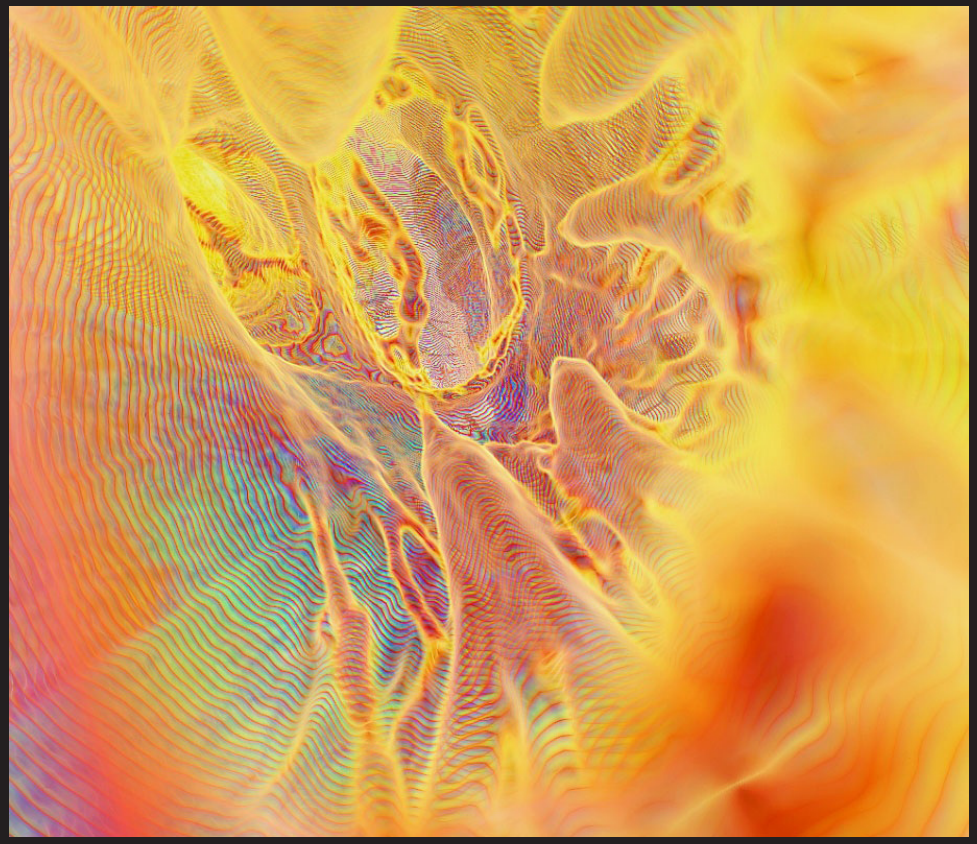
https://en.wikipedia.org/wiki/Magnetic_resonance_imaging (12. 01. 2017)



Internationally known example...

Tomography Art by Kai-hung Fung

Kai-hung Fung is a medical doctor and a specialist in diagnostic radiology. He lives in Hong Kong, China. Using his experience of 3D Computed Tomography for medical diagnosis, he creates artistic images of the human body based on data acquired from CT scanners.
A special rendering method developed by him, known as ‘rainbow technique’.



Within One’s Heart (A virtual view inside the left ventricle looking towards the heart valves), CT picture, 2007-2009.

http://www.slate.com/blogs/brow-beat/2016/11/04/hbo_has_canceled_the_bill_simmons_talk_program_any_given_wednesday.html (05. 11. 2016)

Stepping artefacts are inherent in this process.

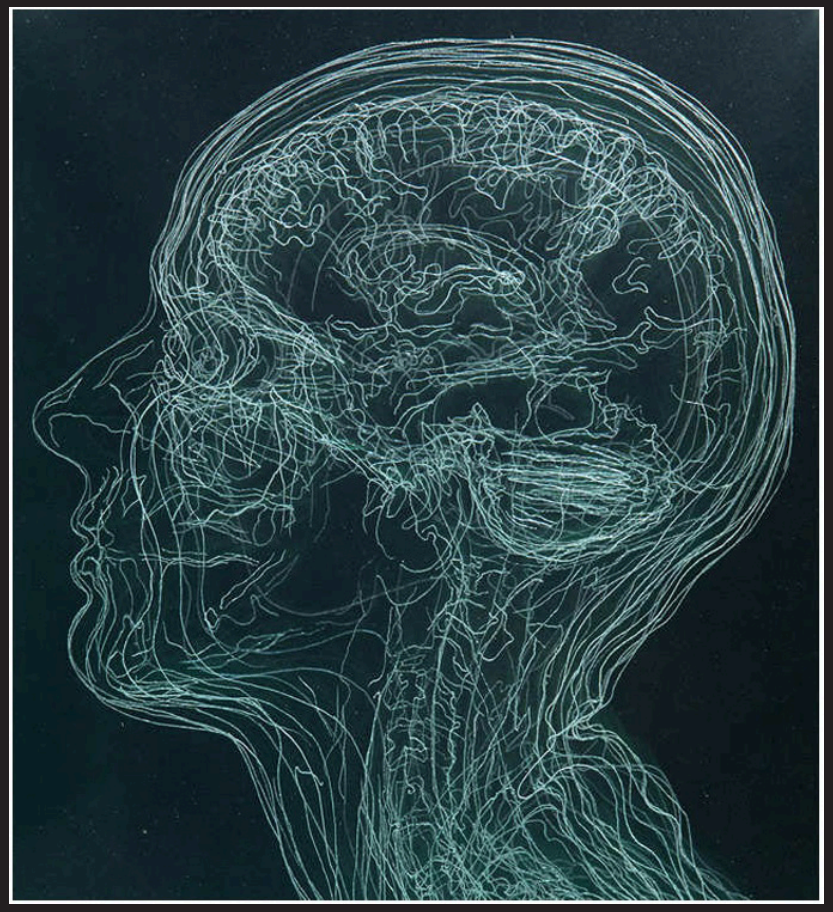
“The Rainbow Technique and the 3D/4D color Moiré art that I pioneered were discovered by accident and through … careful observations when I was experimenting. ... They were in fact image artifacts created by the software.”

Kai-hung Fung

http://3dvisa.cch.kcl.ac.uk/project37.html (05. 11. 2016)

http://www.slate.com/blogs/browbeat/2016/11/04/hbo_has_canceled_the_bill_simmons_talk_program_any_given_wednesday.html (05. 11. 2016)

Other examples for artistic expressions based on MRI/CT images

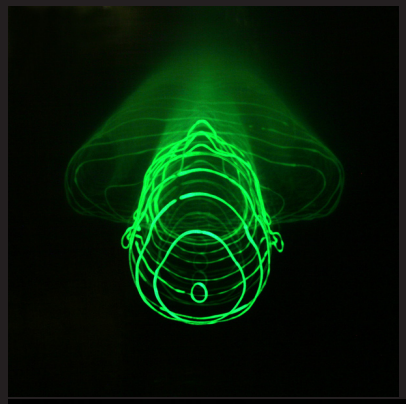


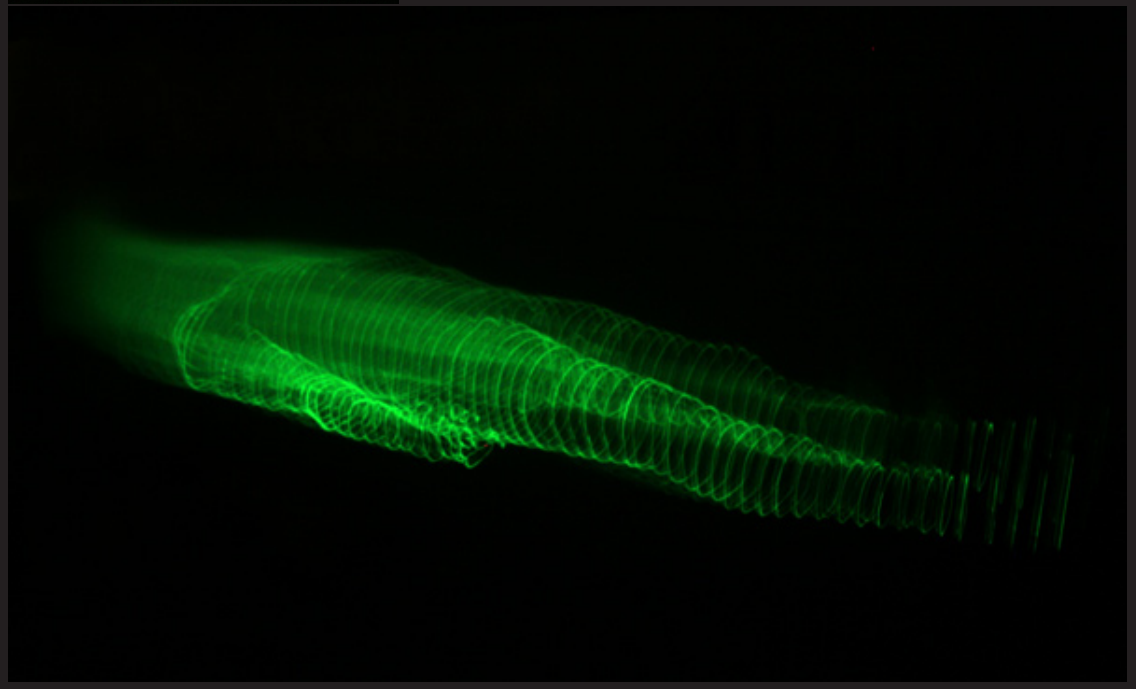
Angela Palmer: Life Lines (based on MRI scans).

Becky Stern: Embroidered MRI slice.

http://visualoop.com/blog/5347/creating-art-with-mri (05. 11. 2016)

Erzsébet Horváth: Corpus, 2010.
Installation, transparent folios, phosphoresent paint, metal, spot lights, time switch,
180x65x53 cm
(based on MRI scans – were made in the Health Center of Kaposvar University).

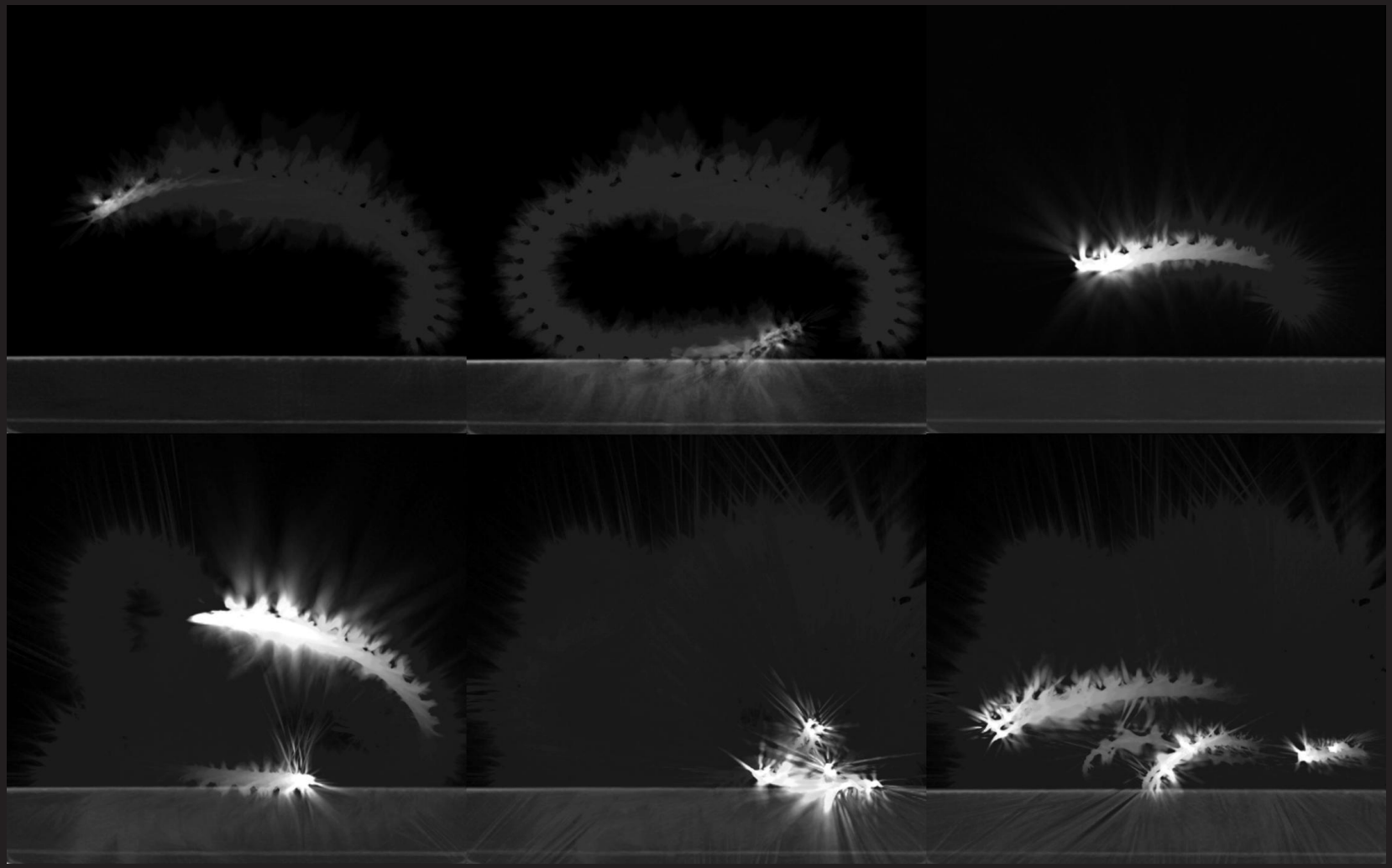




Andrea Szigetvári: CT, 2010.

Interactive audio-video based on CT-animation by Zsolt Gyenes.

Computed Tomograhy scans were taken in the Health Center of Kaposvar University.



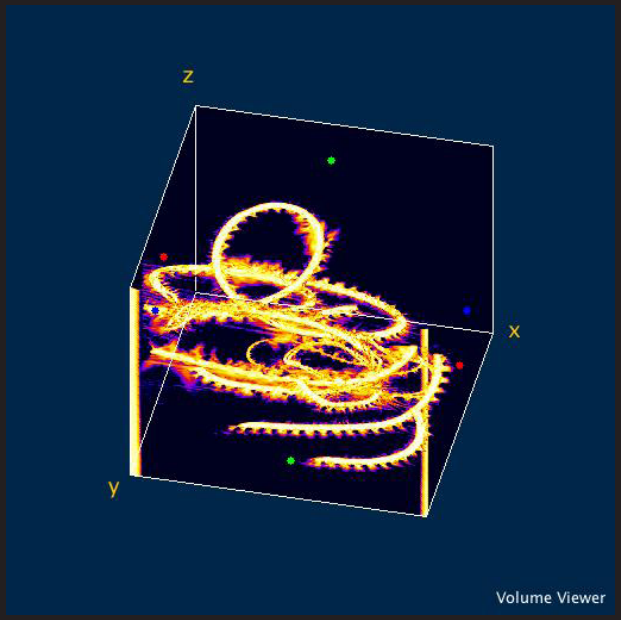
Tomography is a process of imaging by sections, done through the use of any kind of penetrating wave. The normal use for Computed Tomography is in medical imaging of the human body as *object*. My work makes improper use of this system through placing different objects (e. g. wires or film projectors) in the tomograph. The photographic images produced are then animated, creating unexpected results in the form of abstract moving images.

The music serves here as a tool to particularize the expressivity of the visual system.

Different sonic interpretations of the same visual gestures are produced by an interactive music system, which parameters are modified in real time by the performer.
The music is controlled with the data extracted from the analysis of the video.
The video is performed real time: sometimes the 1.5 minutes is played as it is, sometimes the sequence of frames are controlled manually or with a help of directed randomness and loops.The piece has an open form put together from fragments of directed improvisations.
CT was realized and is performed by MAX/MSP/Jitter software.

http://www.seeingsound.co.uk/2016-performances/ (17. 11. 2016)

Online: https://www.youtube.com/watch?v=73o54m5s_2g
Online: https://www.youtube.com/watch?v=F6Lz43LKuac



Wire-composition for CT scans

Live electronics, inter-active music

2. part

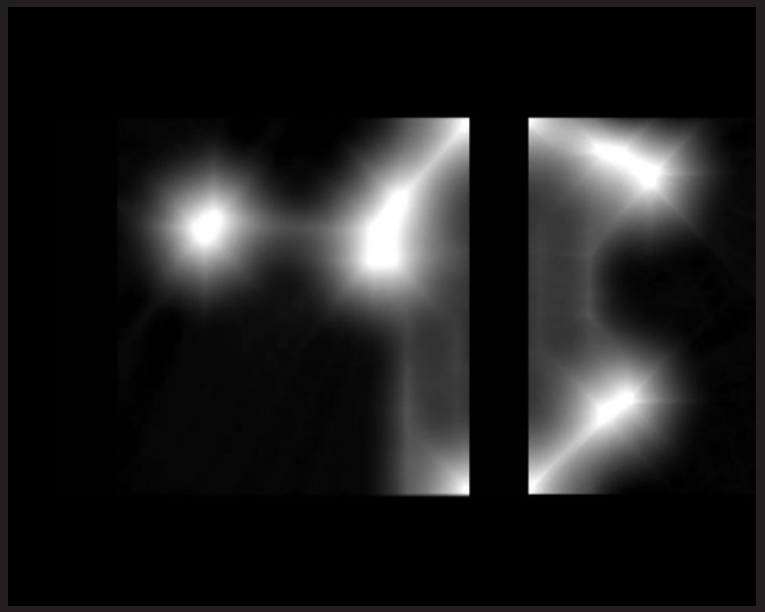
CT works of art were made by Zsolt Gyenes

The CT scans were taken in the Health Center of Kaposvar University.

“Investigation in the Morning”,
Computed Tomography, animation, DVD,
01:00 min., loop, sound, installation, 2009.

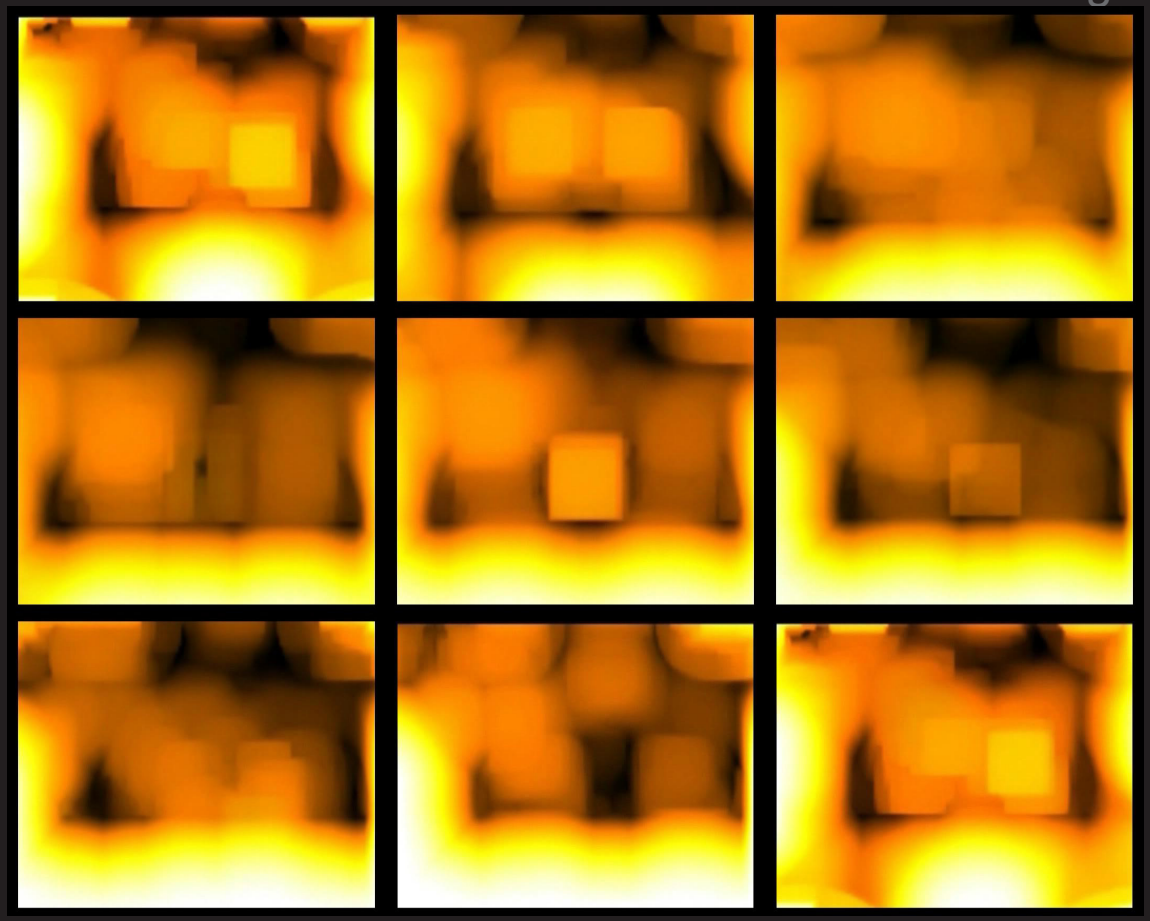
The public could peep into a hole watching
a short loop audio-video opus.

“WWW”, CT-animation, DVD, 10:54 min., loop, 2010.
Sound: A. Szigetvári and Zs.Gyenes,
Video: Zs. Gyenes

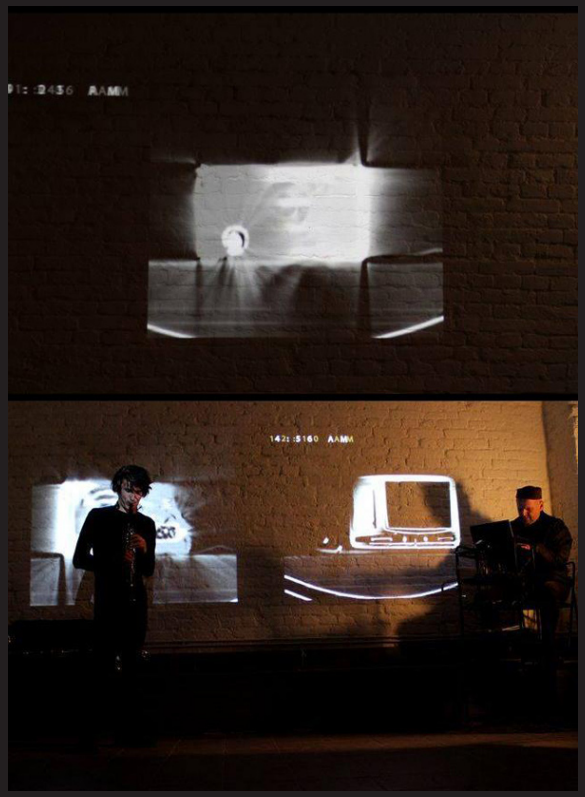


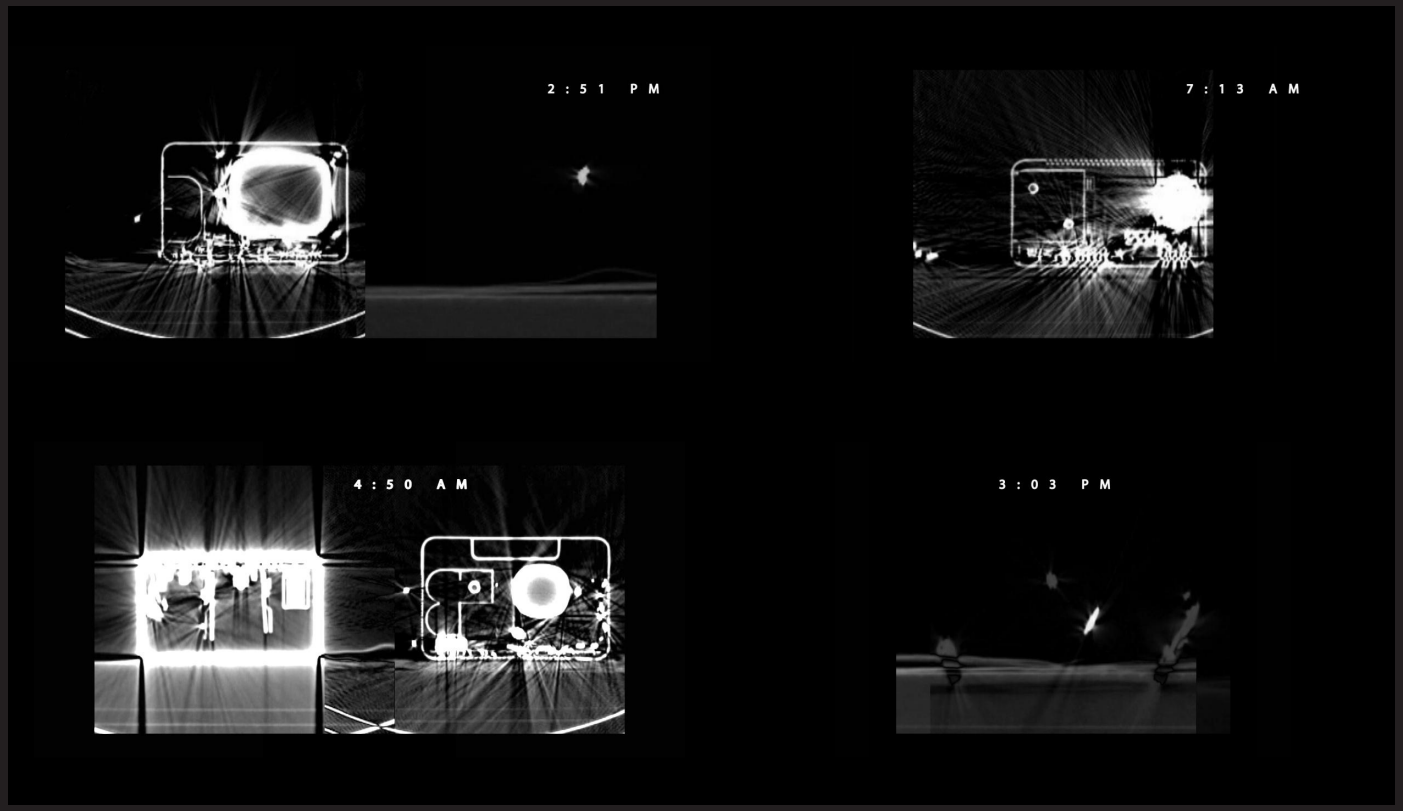
“I don’t feel any nostalgia”, Animation, DVD, 9 min., 2010.
Sound: A. Szigetvári and Zs. Gyenes,
Video: Zs. Gyenes

Online: https://www.youtube.com/watch?v=xURYTeRoegY



“Synchrony Opus 104 (CT)”, Audio-Video, MPEG-2, 1280x720 px, 00:36 min., loop, 2015.





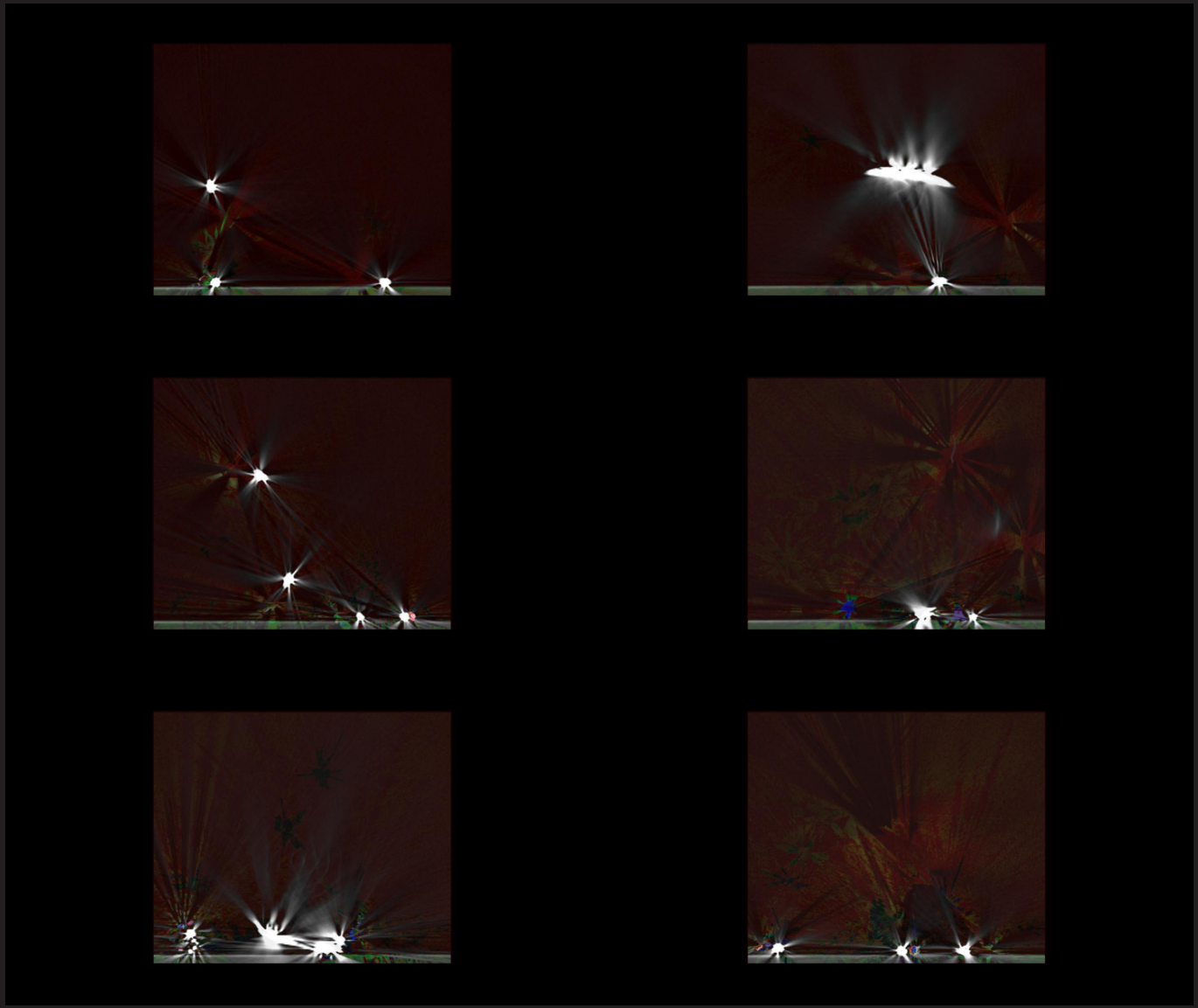
– mutual transparency
– penetrative seeing
– dinamism, unbroken motion, etc.
(see Moholy-Nagy and Kepes as model)

Metal causes disturbances to the magnetic field. It is considered to be a failure in CT-technology. At the same time, the aesthetic aspect of such disturbances prove interesting to me. I did not attempt to eliminate the disturbance, but on the contrary, I strengthened it. I composed an animation strip from the picture slides. The whole work of art is presented as an installation.
The chance and the ‘dislocated apparatus’ created in this case also the particular expression of form.
The sound-environments/textures set out from text. The editing mode of Text-Edit Speech does not know what to do with the frequently repeated sounds, with the unarticulated forms. The apparatus / software begins to stammer, misses vowels and consonants. It results in a music-like, polyphonic expression due to the repetitive structure.

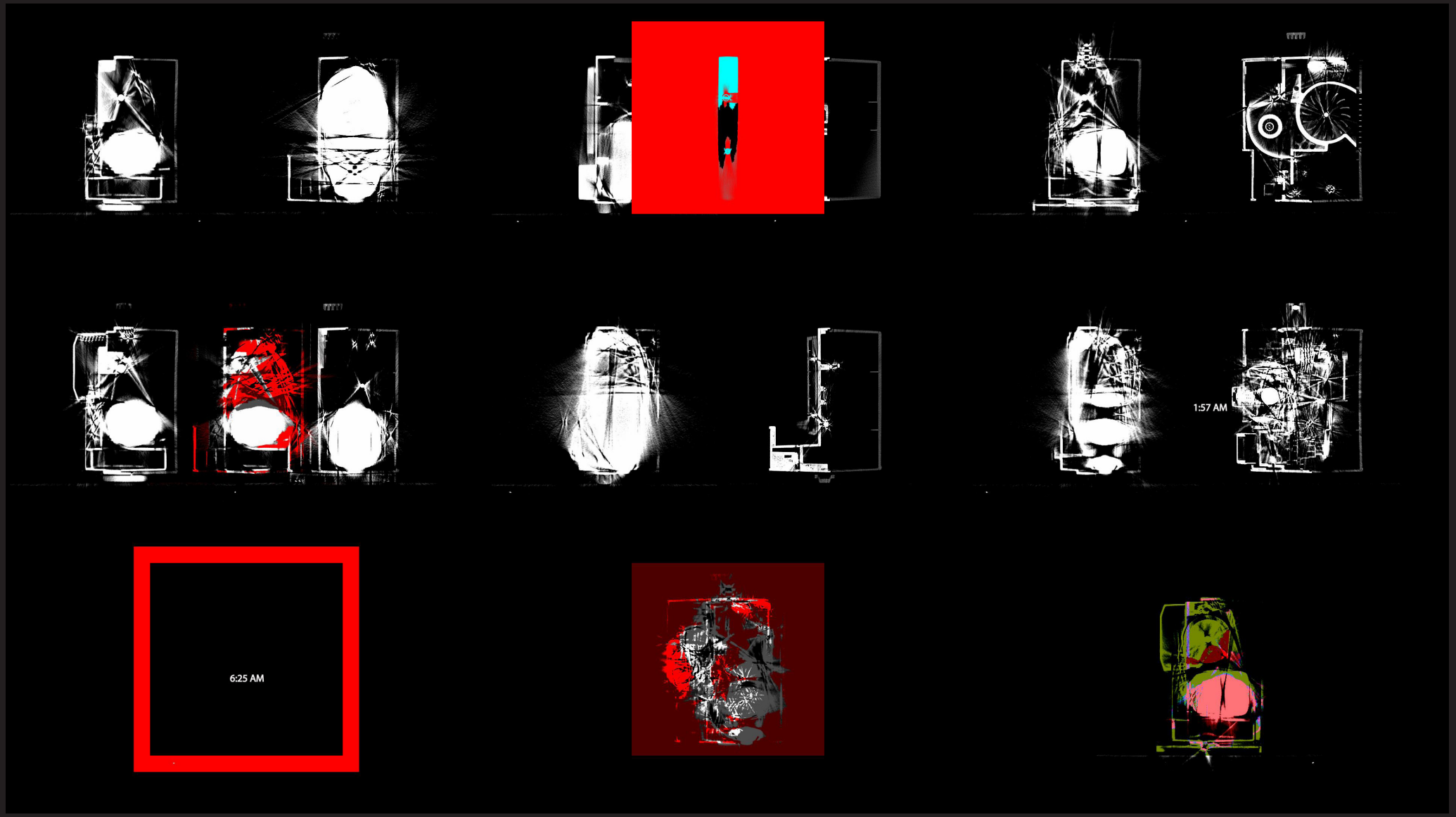
Online: https://www.youtube.com/watch?v=F6Lz43LKuac
Online: https://www.youtube.com/watch?v=DmWGoXfh-Xc

“Lighten, Darken and Difference”, Audio-Video, MPEG-2, 1280x720 px, 01:57 min., 2016-2017. Audio: Remix of Brian Eno’s Soft Dawn (1989) by Zs. Gyenes.

– wire-composition for CT scans & after modifications/effects by different softwares



“CT Projection”, Audio-Video, MPEG-2, 1280x720 px, 03:27 min., loop, 2017.



– Stepping artefacts are inherent in this process.
– Peeping into the inner workings of different technical instruments/apparatuses in an aesthetic and informative way.
– It is a unique voyage.

– The *photographic reality* (CT-scans) and *abstraction* (tomograms, artefacts etc.) create a particular fusion.
– The work is also self-referential: it “projects the projectors”, etc.

– Two new audio-videos were made for this exhibition/project.

Online: https://www.youtube.com/watch?v=DmWGoXfh-Xc

– My CT/MRI works of art were presented in Hungary, Thailand, Germany, Poland, Turkey, Rumania, Serbia, Slovenia and England.

Thank you for the attention!

http://gyenes62.hu/
dyenes@gmail.com

http://vizualzene.hu