OptoClones™ of Russian State Treasures from the Moscow Kremlin Diamond Fund

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HOLOEXPO2018, Nizhny Novgorod, Russia, 11-13 Sep 2018
### 2017

**a year of anniversaries**

<table>
<thead>
<tr>
<th>Country</th>
<th>Event Description</th>
<th>Year</th>
<th>Details</th>
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<tbody>
<tr>
<td>GB</td>
<td>70 years of Holography (Denis Gabor, 1947)</td>
<td>1947</td>
<td></td>
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<tr>
<td>RU</td>
<td>90 birthday of Yuri Denisyuk (1927, St. Petersburg)</td>
<td>1927</td>
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<tr>
<td>GR</td>
<td>30 years of HiH activities (1987, Greece)</td>
<td>1987</td>
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<tr>
<td>RU</td>
<td>50 years of Moscow Kremlin Diamond Fund (1967, USSR)</td>
<td>1967</td>
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<tr>
<td>RU</td>
<td>300 years of Russian State Treasury (1717, Peter the Great)</td>
<td>1717</td>
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</table>
OptoClones™
As unique as the original object

Ultra-realistic (analog) holograms of art objects
Wave-front reconstruction

recording laser light waves reflected off an object, stored on a glass plate and recreated later on

Recording

(White-light) Reconstruction

Yuri N. Denisyuk

Photo of hologram
The Collection of **OptoClones™** of Russian State Treasures

Made by HiH

In collaboration with **ITMO University**

Commissioned by **Gokhran of Russia**

Another world’s first
A multi-national project
Complex Logistics

**In-situ** origination of holograms

- **GR**
  - Transportable proprietary **equipment**

- **UK**
  - Special holographic **glass plates**

- **GR**
  - Proprietary **LED illumination** systems

- **RU**
  - Finishing / Display
June/July 2017

Unofficial photos.
For documentation only
Andreas Sarakinos (HiH, head holographer),
Sergei Stafeev (ITMO),
Kostas Sarakinos (HiH asst.holographer)

• Transportable proprietary equipment

Chemistry room
• Transportable proprietary **equipment**
• Transportable proprietary equipment

Dark room

Chem Lab
• Time for the objects
• Ready to Rock & Roll

Kostas & Andreas Sarakinos
- Security
• Security

Unofficial photos. For documentation only
Inside the dark-room (tent)

ZZZyclops

Recording an OptoClone®
• “Let there be (laser) light”
“Let there be (laser) light”

“Cesar’s Ruby”

Unofficial photos (iPhone6)
For documentation only

Fluorescent light

Photo of original Object (iPhone6)

Under laser-light
“Let there be (laser) light”
Complex Logistics

In-situ origination of holograms

- Transportable proprietary equipment
- Special holographic glass plates
- Proprietary LED illumination systems
- Finishing / Display
• Special holographic glass plates

Under exclusive non-commercial license to HiH

Panchromatic high-resolution silver-halide
120 plates @ 30x40cm
@ 20x25cm
120 exposures (incl. trials)
Each: 30min
• Another feather in our hat

Mikhail Shevtsov, Andreas Sarakinos, Alkis Lembessis
Гохран России
Order of St. Alex. Nevsky (Badge)

L. Pfizener (1775); Gold, silver, diamonds (97.78 carats), spinels, glass, enamel
Gokhran of Russia

Photo of original Object (iPhone6)

Is it ultra-realistic?

Photo of OptoClone™ (S7)
Order of St. Alex. Nevsky (Badge)

L. Pfizener (1775); Gold, silver, diamonds (97.78 carats), spinels, glass, enamel

Gokhran of Russia

Is it ultra-realistic?
Cesar’s Ruby (Pendant)
Gustav III (1777); Gold, Pink tourmaline-rubellite (52.00 carats), enamel
Gokhran of Russia

Is it ultra-realistic?
Cesar’s Ruby (Pendant)
Gustav III (1777); Gold, Pink tourmaline-rubellite (52.00 carats), enamel
Gokhran of Russia

Is it ultra-realistic?

Video of OptoClone
Bow-Esclavage
L. Pfistener (1764); Gold, silver, diamonds, spinels
Gokhran of Russia

Unofficial photos.
For documentation only

Is it ultra-realistic?
Bow-Esclavage
L. Pfistener (1764); Gold, silver, diamonds, spinels
Gokhran of Russia

Photo of original Object (Catalogue)

Unofficial photos.
For documentation only

Is it ultra-realistic?

Video of OptoClone
Order of St. Catherine (Badge & Cross)
Karl Ghana jewelers (1904); Gold, silver, diamonds, enamel
Gokhran of Russia

Unofficial photos.
For documentation only

Is it ultra-realistic?
Order of St. Catherine (Badge & Cross)
Karl Ghana jewelers (1904); Gold, silver, diamonds, enamel
Gokhran of Russia

Is it ultra-realistic?
Rattle-Whistle (Toy)
S. Larionov, M. Belsky (1740); Gold, silver, diamonds, rubies, emeralds, ivory
Gokhran of Russia

Is it ultra-realistic?
Rattle-Whistle (Toy)
S. Larionov, M. Belsky (1740); Gold, silver, diamonds, rubies, emeralds, ivory
Gokhran of Russia

Is it ultra-realistic?
Complex Logistics

**In-situ** origination and finishing of holograms

- **GR**
  - Transportable proprietary **equipment**

- **UK**
  - Special holographic **glass plates**

- **GR**
  - Proprietary **LED illumination** systems

- **RU**
  - Finishing / Display
Proprietary LED illuminants

A. Sarakinos, N. Zervos and A. Lembessis
• Proprietary LED illuminants

Market price: 450€ / pc
• Proprietary LED illuminants
RU

• Finishing / Display

ITMO UNIVERSITY
holographic laboratory

St. Petersburg, Sep 2017

Andreas Sarakinos
RU

• Finishing / Display

ITMO UNIVERSITY
holographic laboratory

ITMO Rector V. Vasiliev, A. Sarakinos (HiH), S. Stafeev (ITMO)
• Display

On Stage
At that time, they were kept...
Best of Display 2017

IHMA

Diamond Fund
Hellenic Institute of Holography

THE HOLOGRAPHY CONFERENCE™

Hellenic Institute of Holography
A collection of 11 OptoClones™

Optical Documentation - Ready to Travel (for exhibition)
Moscow State Historical Museum

Nov 2017-Jan 2018
Chelyabinsk, State Historical Museum of Southern Urals

July-Sep 2018
Happy Birthday
Credits

✓ Andreas Sarakinos (HiH)
✓ Kostas Sarakinos (HiH)

----------------------------------------------

✓ Sergey Stafeev (ITMO)
✓ Elena Bobritskaya (OPTIMUS)
✓ Mikhail Shevtsov (SOI Vavilov)
✓ George Kekatos (HiH)
✓ Yulia Sorokina (HiH)
✓ Vitaly Rozhkov (Gokhran)

Thank you for your attention