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(12) **United States Design Patent**  
**Nakabayashi et al.**

(10) **Patent No.:** **US D728,491 S**  
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- (54) **LIGHT EMITTING DIODE**
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**Masaki Hayashi**, Anan (JP); **Daisuke Kishikawa**, Tokushima (JP)
- (73) Assignee: **Nichia Corporation**, Tokushima (JP)
- (\*\*) Term: **14 Years**
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- (52) **U.S. Cl.**  
USPC ..... **D13/180**
- (58) **Field of Classification Search**  
CPC ... H01L 25/167; H01L 25/0753; H01L 27/15;  
H01L 27/156; H01L 31/02; H01L 33/00;  
H01L 33/04; H01L 33/08; H01L 33/10;  
H01L 33/20; H01L 33/38; H01L 33/42;  
H01L 33/48; H01L 33/483; H01L 33/486  
USPC ..... D13/180; D26/1; 257/79, 80, 81, 88,  
257/89, 95, 98, 99, 100, E33.058; 313/483,  
313/498, 500; 362/555, 800  
See application file for complete search history.

- (56) **References Cited**  
**U.S. PATENT DOCUMENTS**  
D505,397 S \* 5/2005 Asakawa ..... D13/180  
D517,025 S \* 3/2006 Asakawa ..... D13/180  
D555,114 S \* 11/2007 Yen ..... D13/180  
D566,059 S \* 4/2008 Tanaka ..... D13/180  
D568,261 S \* 5/2008 Lee et al. .... D13/180  
D576,573 S \* 9/2008 Kobayakawa ..... D13/180  
D592,617 S \* 5/2009 Bando ..... D13/180

- D593,967 S \* 6/2009 Fushimi ..... D13/180
- D618,637 S \* 6/2010 Liu et al. .... D13/180
- D619,110 S \* 7/2010 Lin et al. .... D13/180
- D622,682 S \* 8/2010 Park et al. .... D13/180
- D646,644 S \* 10/2011 Chen et al. .... D13/180

(Continued)

**FOREIGN PATENT DOCUMENTS**

- JP D1352540 3/2009
- JP D1356933 4/2009
- KR 3006443590000 5/2012

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(57) **CLAIM**  
We claim the ornamental design for a light emitting diode, as shown and described.

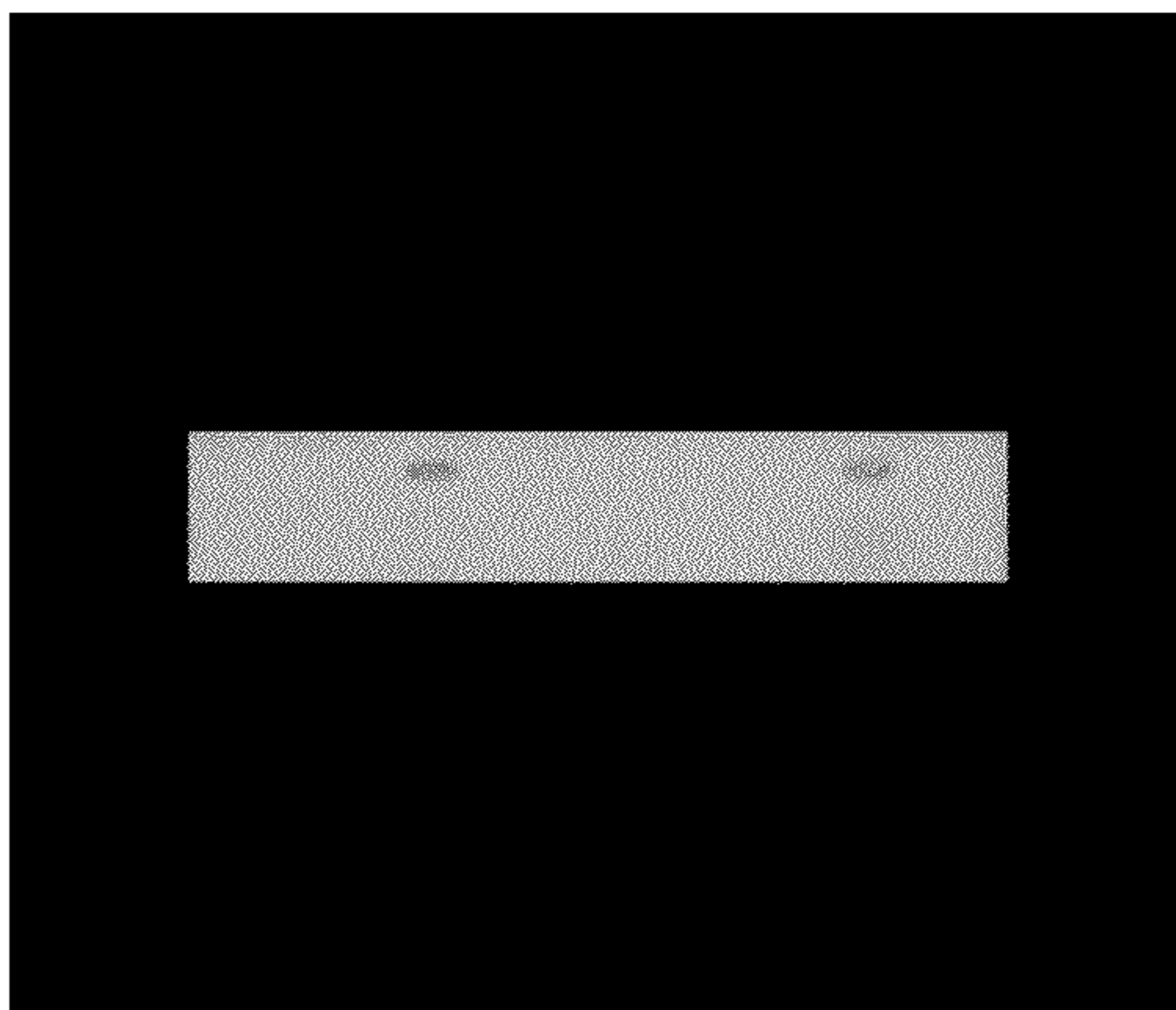
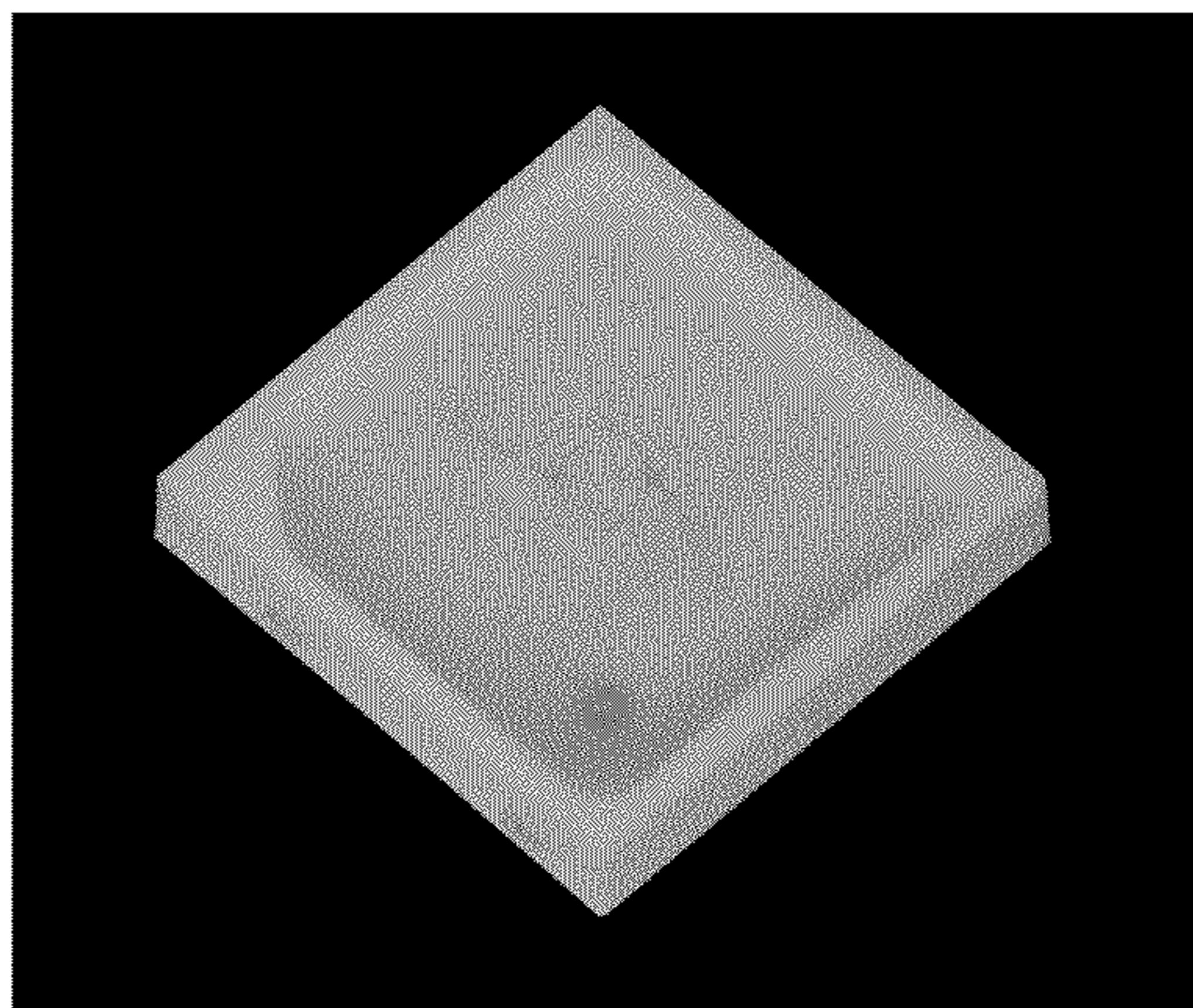
**DESCRIPTION**

The application contains at least one drawing executed in color. Copies of this patent or patent application publication with color drawing(s) will be provided by the Office upon request and payment of the necessary fee.

FIG. 1 is a front, bottom, and right side perspective view of a light emitting diode according to our new design;  
FIG. 2 is a front view of the light emitting diode shown in FIG. 1;  
FIG. 3 is a rear view of the light emitting diode shown in FIG. 1;  
FIG. 4 is a top view of the light emitting diode shown in FIG. 1;  
FIG. 5 is a bottom view of the light emitting diode shown in FIG. 1;  
FIG. 6 is right side view of the light emitting diode shown in FIG. 1; and,  
FIG. 7 is a left side view of the light emitting diode shown in FIG. 1.

The yellow colored window in FIGS. 1 and 2 is translucent.

**1 Claim, 7 Drawing Sheets**  
**(7 of 7 Drawing Sheet(s) Filed in Color)**



(56)

**References Cited**

U.S. PATENT DOCUMENTS

D646,645 S \* 10/2011 Chen et al. .... D13/180  
 D646,646 S \* 10/2011 Chen et al. .... D13/180  
 D646,647 S \* 10/2011 Chen et al. .... D13/180  
 D647,491 S \* 10/2011 Chen et al. .... D13/180  
 8,044,412 B2 \* 10/2011 Murphy et al. .... 257/81  
 8,058,662 B2 \* 11/2011 Kim et al. .... 257/98  
 8,106,406 B2 \* 1/2012 Liu et al. .... 257/81  
 D660,813 S \* 5/2012 Otaki et al. .... D13/180  
 D676,003 S \* 2/2013 Takeda et al. .... D13/180  
 8,587,011 B2 \* 11/2013 Matsuda et al. .... 257/98  
 D698,047 S \* 1/2014 Sasaoka et al. .... D26/1  
 8,716,721 B2 \* 5/2014 Tachibana .... 257/81  
 D709,042 S \* 7/2014 Cai .... D13/180  
 8,779,567 B2 \* 7/2014 Noichi et al. .... 257/668  
 D712,851 S \* 9/2014 Cai et al. .... D13/180

2006/0131600 A1 \* 6/2006 Nakaoka et al. .... 257/99  
 2007/0228387 A1 \* 10/2007 Negley et al. .... 257/79  
 2009/0242915 A1 \* 10/2009 Chang Chien et al. .... 257/98  
 2010/0059782 A1 \* 3/2010 Fujitomo et al. .... 257/98  
 2011/0079801 A1 \* 4/2011 Zhang et al. .... 257/98  
 2011/0108866 A1 \* 5/2011 Lee et al. .... 257/98  
 2012/0126266 A1 \* 5/2012 Watari et al. .... 257/98  
 2012/0286301 A1 \* 11/2012 Kobayakawa et al. .... 257/88  
 2013/0026502 A1 \* 1/2013 Park .... 257/88  
 2013/0037842 A1 \* 2/2013 Yamada et al. .... 257/98  
 2013/0062644 A1 \* 3/2013 Ushiyama .... 257/98  
 2013/0062648 A1 \* 3/2013 Nishimura .... 257/98  
 2013/0193468 A1 \* 8/2013 Hussell et al. .... 257/98  
 2013/0200420 A1 \* 8/2013 Hussell .... 257/98  
 2013/0207126 A1 \* 8/2013 Ankireddi et al. .... 257/81  
 2013/0256711 A1 \* 10/2013 Joo et al. .... 257/88  
 2013/0285084 A1 \* 10/2013 Schneider et al. .... 257/89

\* cited by examiner



Fig. 1

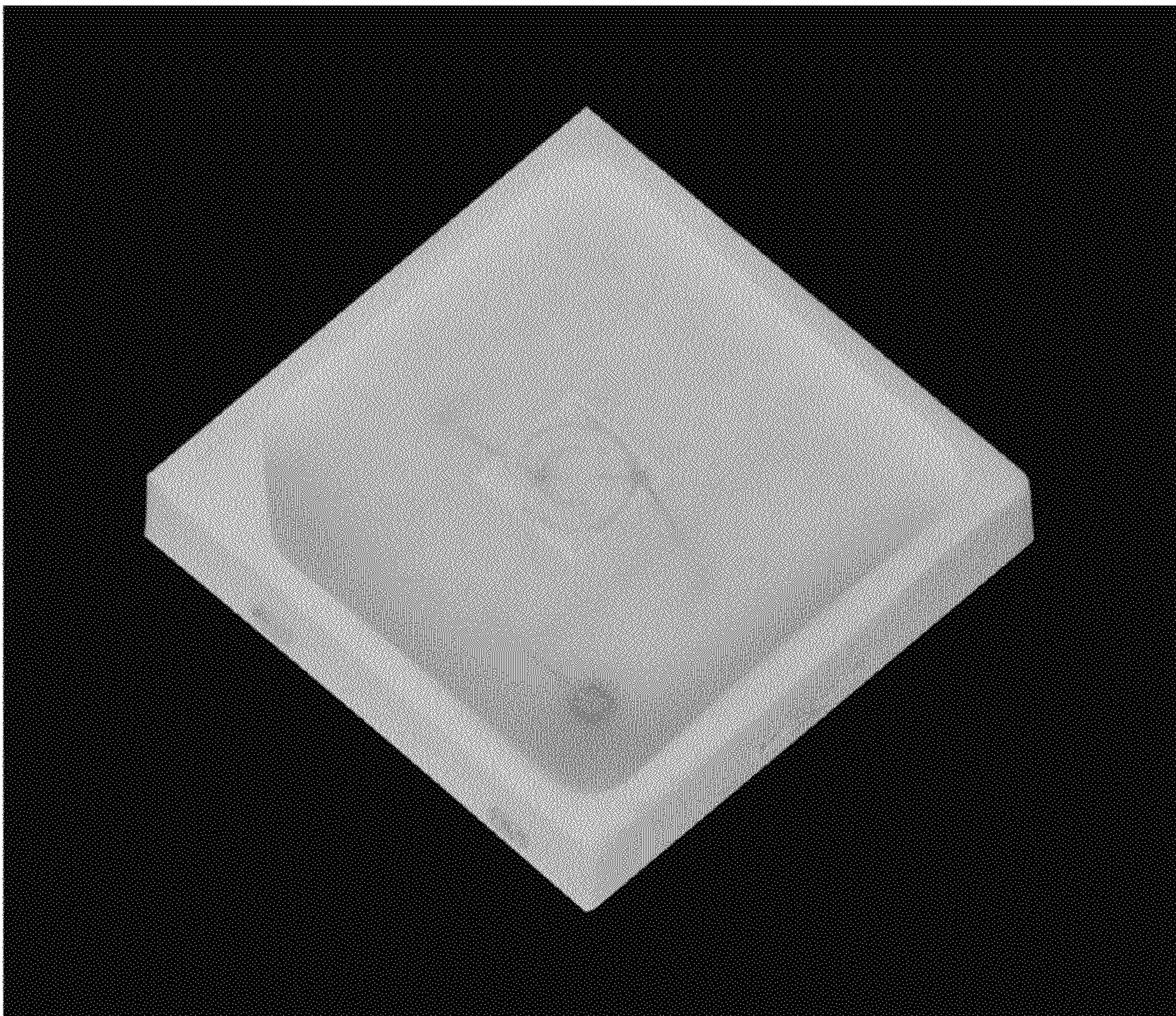




Fig.2

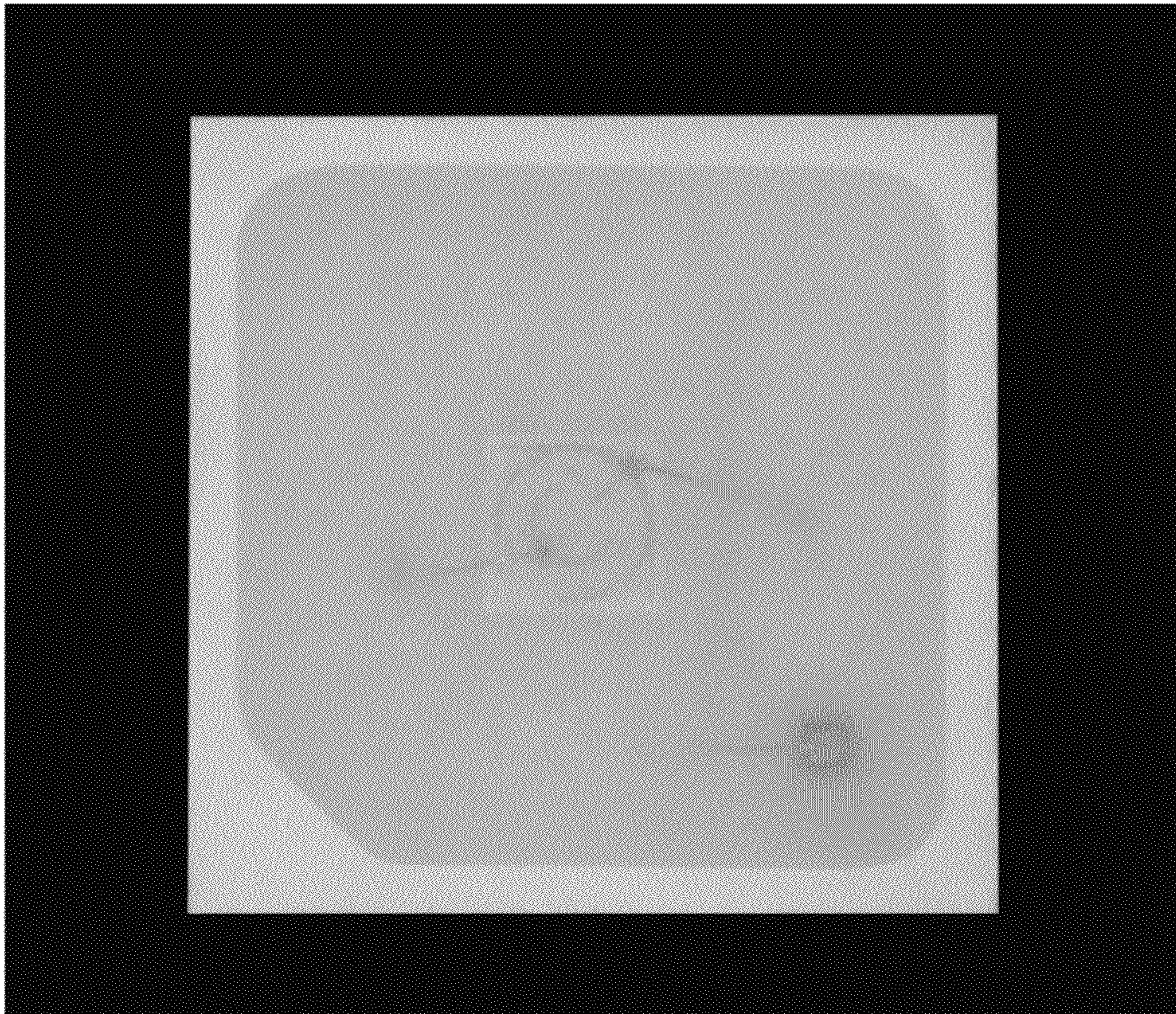




Fig.3

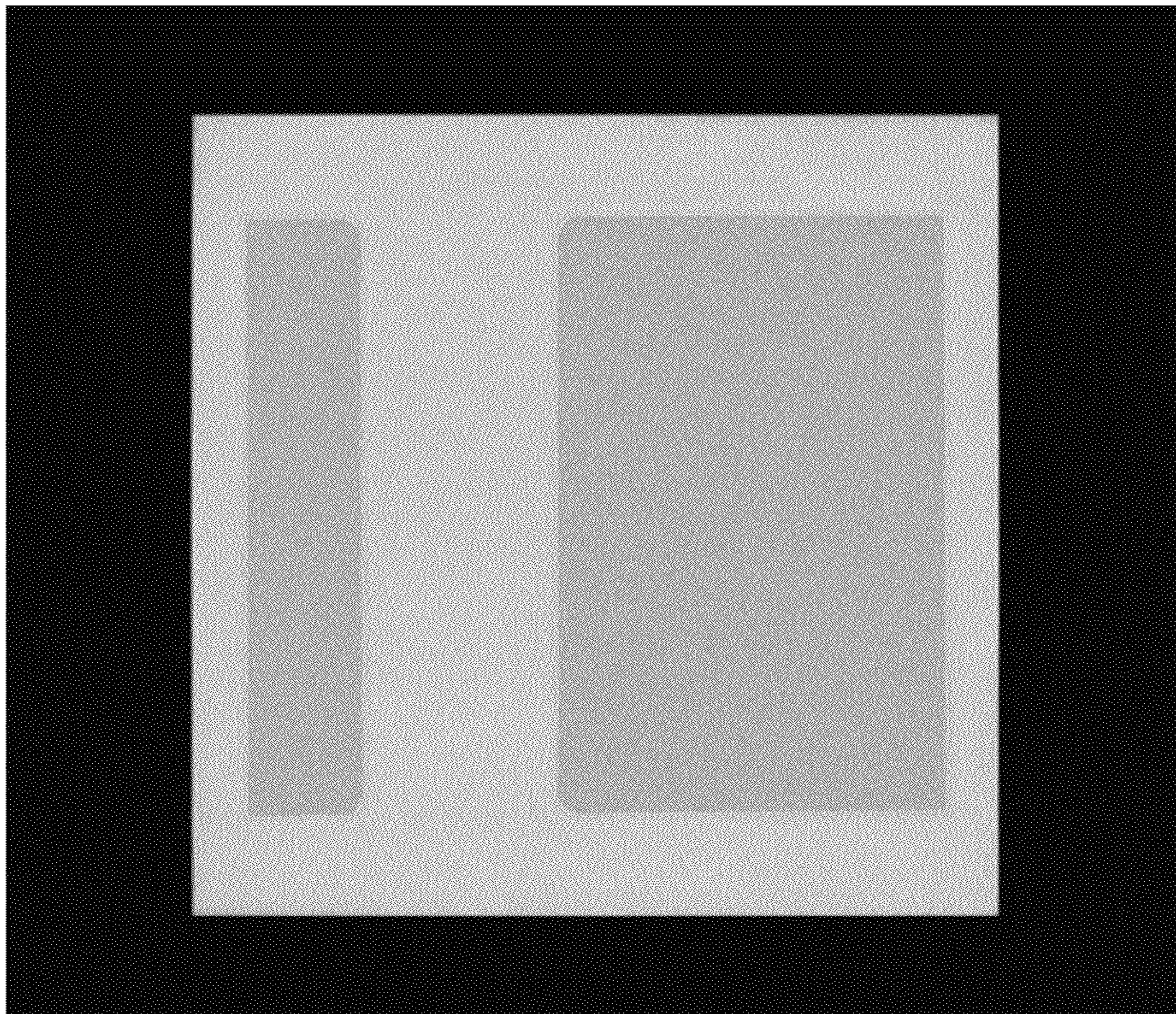




Fig.4

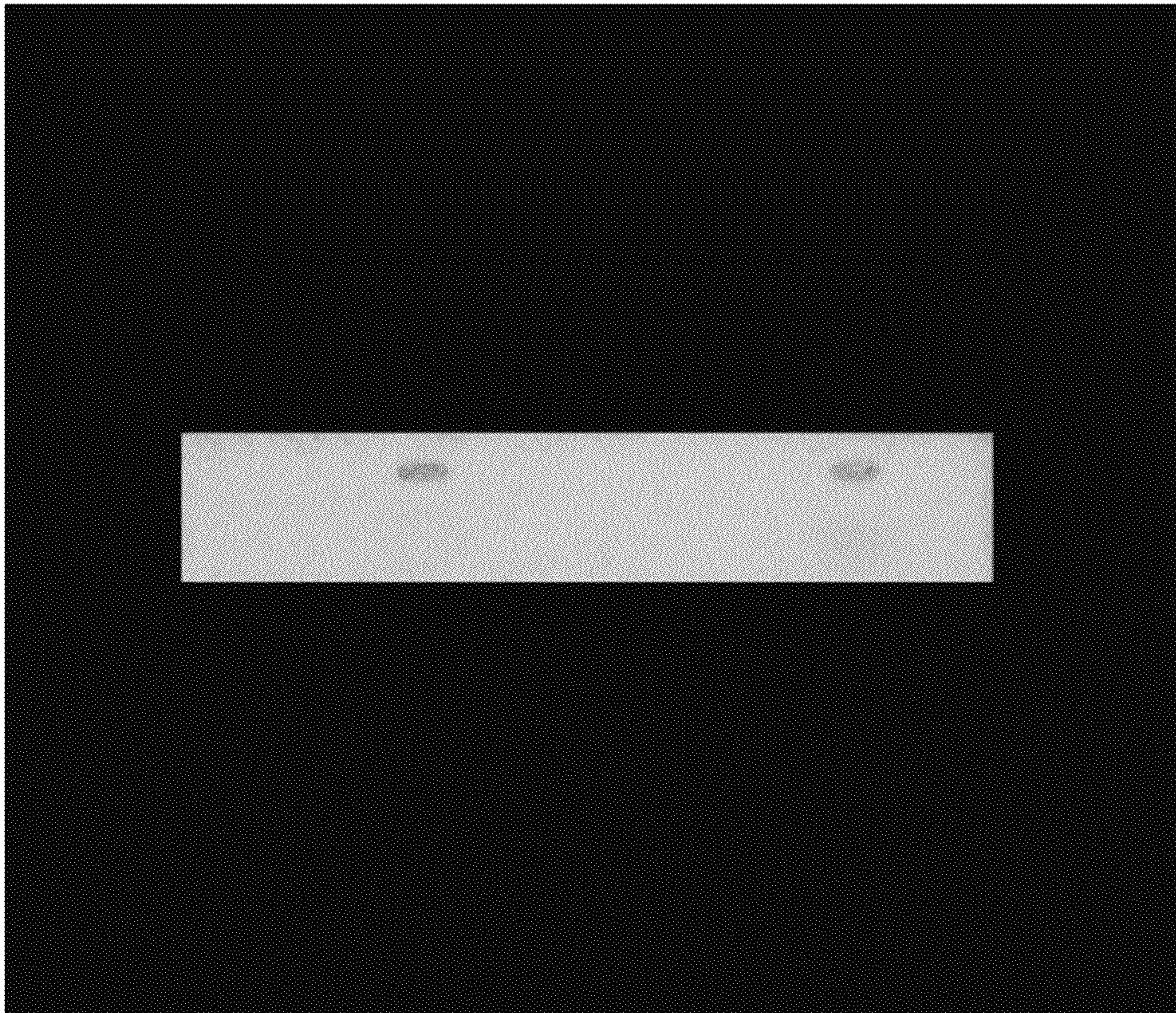




Fig.5

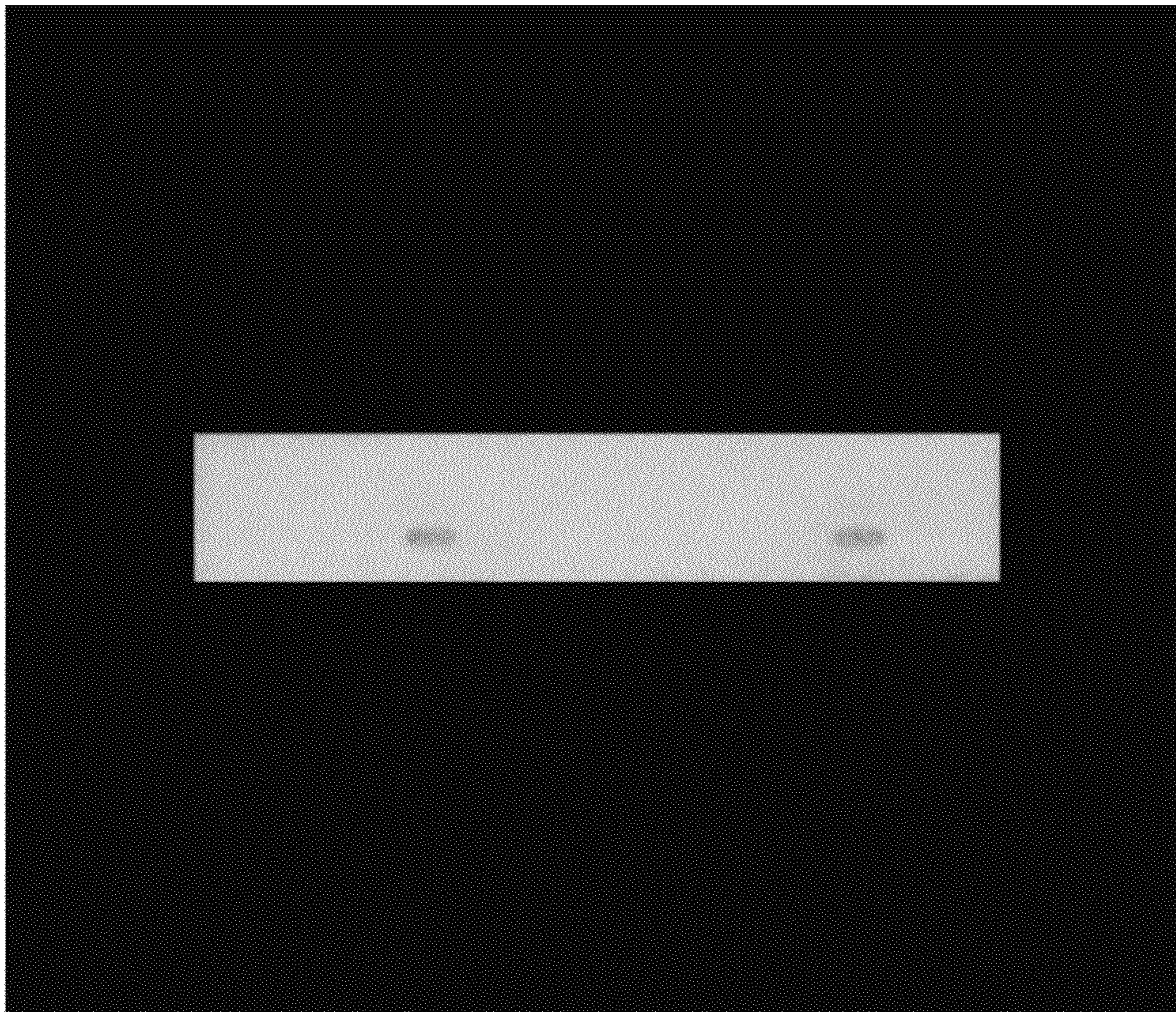




Fig.6

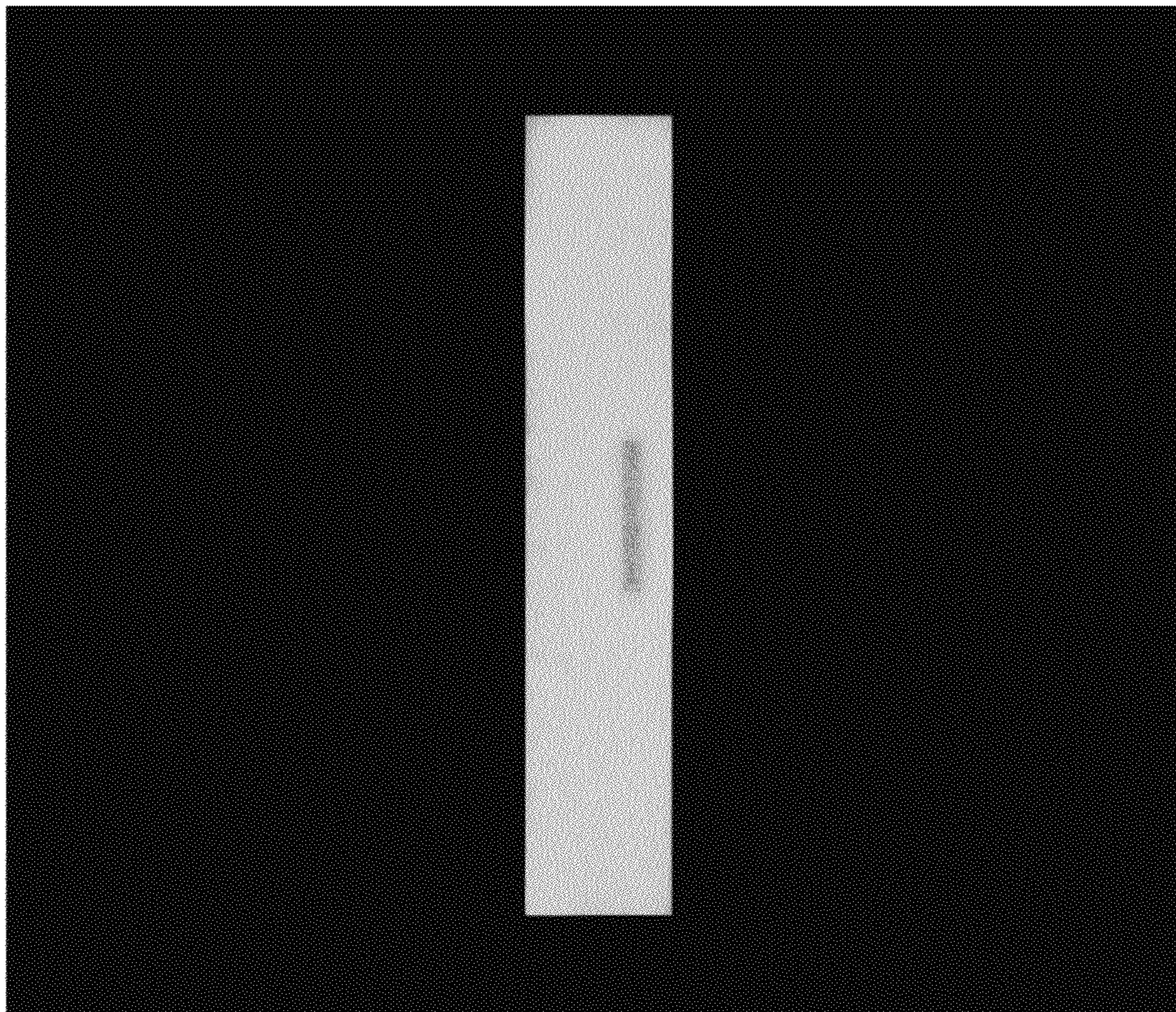




Fig.7

