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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD  
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VIZIO, INC.,

Petitioner,

v.

NICHIA CORPORATION,

Patent Owner.  
-----

Case No. IPR2018-00386

Patent 9,490,411

DEPOSITION OF STANLEY R. SHANFIELD, Ph.D.

East Palo Alto, California

Wednesday, December 19, 2018

9:10 a.m.

Job No.: 221516

Pages: 1 - 101

Reported By: Charlotte Lacey, RPR, CSR No. 14224

**NICHIA EXHIBIT 2021**  
*Vizio, Inc. v. Nichia Corp.*

1 DEPOSITION OF STANLEY R. SHANFIELD, Ph.D., held at  
2 the offices of ROPES & GRAY LLP, 1900 University Avenue,  
3 6th Floor, East Palo Alto, California

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7 Pursuant to notice, before Charlotte Lacey,  
8 Certified Shorthand Reporter, in and for the State of  
9 California.

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A P P E A R A N C E S

ON BEHALF OF PETITIONER VIZIO, INC.:

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I N D E X

WITNESS	PAGE
STANLEY R. SHANFIELD, Ph.D.	
Examination by Mr. Jones	5

I N D E X O F E X H I B I T S

EXHIBITS	DESCRIPTION	PAGE
Exhibit S1	Blowup of figure 1	16
Exhibit S2	Blowup of figure 1	19
Exhibit S3	Annotated version of figure 1	31
Exhibit S4	Annotated version of figure 1	35
Exhibit S5	Three-dimensional block	44
Exhibit S6	LED outer side surface, Upper surface of exposed lead	50
Exhibit S7	Illustration in figure 1	62

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P R O C E E D I N G S

STANLEY R. SHANFIELD, Ph.D.,

the witness herein, having been first duly sworn, was  
examined and testified as follows:

EXAMINATION

BY MR. JONES:

Q Good morning, Dr. Shanfield.

A Good morning.

Q My name is Michael Jones. I'm from the law  
firm of Rothwell Figg. And I'm joined by Marty Zoltick,  
also of Rothwell Figg.

Can you please state your full name for the  
record.

A Stanley R. Shanfield.

Q Okay. And where do you work?

A Work at Draper Laboratories.

Q And what's your position at Draper  
Laboratories?

A I'm a distinguished member of technical staff.

Q And how long have you been a distinguished  
member of technical staff?

A I don't exactly remember when I was awarded  
that, but I started in 2003.

Q Started at Draper in 2003?

A Yes, right.

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