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U.S. DEPARTMENT OF COMMERCE

SON-1695/ITO

Patent and Trademark Office

To the Honorable Commissioner of Patents and Trademarks: Please record the attached original documents or copy thereof.

1. Name of conveying party(ies)

Koichi IIDA
Ichiro SAITO
Shinichi TACHIZONO
Takeshi YAMAGISHI

Additional name(s) of conveying party(ies) attached No

5-2401
3-31-01 C

2. Name and address of receiving party(ies)

Name: SONY CORPORATION.

Internal Address:

Street Address: 7-35 KITASHINAGAWA 6-CHOME
SHINAGAWA-KU

City: TOKYO, JAPAN

Additional name(s) & address(es) attached Yes No

3. Nature of conveyance:

Assignment Merger

Security Agreement Change of Name

Other To correct the spelling of the second listed assignee as shown on the second cover sheet attached hereto.

Execution Date: January 5, 2000; January 20, 2000; January 25, 2000

4. Application number(s) or patent number(s): 09/458,830

If the document is being filed together with a new application, the execution date of the application is

Additional numbers attached No

5. Name and address of party to whom correspondence concerning document should be mailed:

Name: Ronald P. Kananen, Esq.

Internal Address: RADER, FISHMAN & GRAUER
Suite 501

Street Address: 1233 20th Street, NW

City: Washington, D.C. Zip: 20036

6. Total number of applications and patents involved:..... 1

7. Total fee (37 CFR 3.41)..... \$ 40.00

Enclosed

Authorized to be charged to Deposit Account

8. Deposit account number:
18-0013
(Attach duplicate copy of this page if paying by deposit account)

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9. Statement and signature.

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

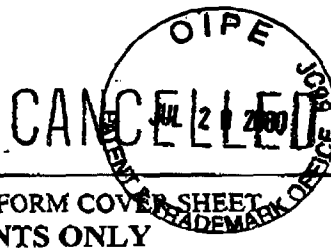
R. P. Kananen
Name of Person Signing

May 24, 2001
Date

Total number of pages comprising cover sheet

1 of 2

PATENT



FORM PTO-129a RECORDATION FORM COVER SHEET PATENTS ONLY U.S. DEPARTMENT OF COMMERCE Patent and Trademark Office

SON-1695/ITO

To the Honorable Commissioner of Patents and Trademarks: Please record the attached original documents or copy thereof.

1. Name of conveying party(ies) Koichi IIDA Ichiro SAITO Shinichi TACHIZONO Takeshi YAMAGISHI Additional name(s) of conveying party(ies) attached No

2. Name and address of receiving party(ies) Name: HITACHI POWERED METALS, CO., LTD. Internal Address: Street Address: MINORIDAI 520, MATSUDO-SHI

3. Nature of conveyance: [X] Assignment [] Merger [] Security Agreement [] Change of Name Other Execution Date: January 5, 2000; January 20, 2000; January 25, 2000

City: CHIBA-KEN, JAPAN Additional name(s) & address(es) attached [X] Yes [] No

4. Application number(s) or patent number(s): 09/458,830 If the document is being filed together with a new application, the execution date of the application is Additional numbers attached No

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6. Total number of applications and patents involved: 1 7. Total fee (37 CFR 3.41): \$ 40.00 [] Enclosed [X] Authorized to be charged to Deposit Account 8. Deposit account number: 18-0013 (Attach duplicate copy of this page if paying by deposit account)

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9. Statement and signature. To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document. Ronald P. Kananen Name of Person Signing Signature Date March 31, 2000 Total number of pages comprising cover sheet

2 ASSIGNEES

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U.S. DEPARTMENT OF COMMERCE

SON-1695/ITO

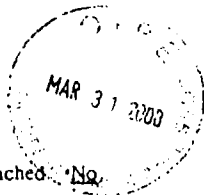
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Patent and Trademark Office

To the Honorable Commissioner of Patents and Trademarks: Please record the attached original documents or copy thereof.

1. Name of conveying party(ies)

Koichi HIDA
Ichiro SAITO
Shinichi TACHIZONO
Takeshi YAMAGISHI



Additional name(s) of conveying party(ies) attached: No

2. Name and address of receiving party(ies)

Name: SONY CORPORATION

Internal Address:

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SHINAGAWA-KU

City: TOKYO, JAPAN

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Ronald P. Kananen
Name of Person Signing

[Signature]
Signature

March 31, 2000
Date

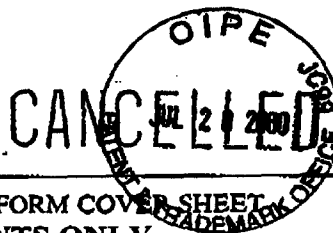
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SON-1695/ITO

To the Honorable Commissioner of Patents and Trademarks: Please record the attached original documents or copy thereof.

1. Name of conveying party(ies)

Koichi IIDA
Ichiro SAITO
Shinichi TACHIZONO
Takeshi YAMAGISHI

Additional name(s) of conveying party(ies) attached No

2. Name and address of receiving party(ies)

Name: HITACHI POWERED METALS, CO., LTD.

Internal Address:

Street Address: MINORIDAI 520, MATSUDO-SHI

City: CHIBA-KEN, JAPAN

Additional name(s) & address(es) attached [X] Yes [] No

3. Nature of conveyance:

- [X] Assignment [] Merger
[] Security Agreement [] Change of Name

Other

Execution Date: January 5, 2000; January 20, 2000; January 25, 2000

4. Application number(s) or patent number(s): 09/458,830

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6. Total number of applications and patents involved:..... 1

7. Total fee (37 CFR 3.41)..... \$ 40.00

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9. Statement and signature.

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Ronald P. Kananen
Name of Person Signing

[Signature]
Signature

March 31, 2000
Date

Total number of pages comprising cover sheet

2 ASSIGNEES

S99P1420151

Docket Number: SON-1695/ITO

ASSIGNMENT

WHEREAS, I, as a below named inventor, residing at the address stated next to my name, am a sole inventor (if only one name is listed below) or a joint inventor (if plural names are listed below) of certain new and useful improvements in FIELD EMISSION TYPE CATHODE, ELECTRON EMITTING APPARATUS AND PROCESS FOR MANUFACTURING ELECTRON EMITTING APPARATUS

for which application for Letters Patent of the United States of America was executed by me on the date indicated next to my name and address;

AND WHEREAS, Sony Corporation, located and doing business at ~~7-35~~ ⁸⁴⁰ Kitashinagawa 6-Chome, Shinagawa-ku, Tokyo, JAPAN and Hitachi ~~Powered~~ ^{pounded} Metals Co., Ltd. located and doing business at Minoridai 520, Matsudo-shi, Chiba-ken, JAPAN (hereinafter referenced as ASSIGNEES) are desirous of acquiring all interest in, to and under said invention, said application disclosing the invention and in, to and under any Letters Patent or similar legal protection which may be granted therefor in the United States and in any and all foreign countries;

NOW THEREFORE, in consideration of the sum of One Dollar (\$1.00), and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, I, as a sole or joint inventor as indicated below, by these presents do hereby assign, sell and transfer unto the said ASSIGNEES, its successors, assigns, and legal representatives, the entire right, title and interest in the said invention, said application, including any divisions and continuations thereof, and in and to any and all Letters Patent of the United States, and countries foreign thereto, which may be granted for said invention, and in and to any all priority rights and/or convention rights under the International Convention for the Protection of Industrial Property, Inter-American Convention Relating to Patents, Designs and Industrial Models, and any other international agreements to which the United States of America adheres, and to any other benefits accruing or to accrue to me with respect to the filing of applications for patents or securing of patents in the United States and countries foreign thereto, and I hereby authorize and request the Commissioner of Patents to issue the said United States Letters Patent to said ASSIGNEE, as the assignee of the whole right, title and interest thereto;

And I further agree to execute all necessary or desirable and lawful future documents, including assignments in favor of ASSIGNEES or its designee, as ASSIGNEES or its successors, assigns and legal representatives may from time-to-time present to me and without further remuneration, in order to perfect title in said invention, modifications, and improvements in said invention, applications and Letters Patent of the United States and countries foreign thereto;

And I further agree to properly execute and deliver and without further remuneration, such necessary or desirable and lawful papers for application for foreign patents, for filing subdivisions of said application for patent, and or, for obtaining any reissue or reissues of any Letters Patent which may be granted for my aforesaid invention, as the ASSIGNEES

thereof shall hereafter require and prepare at its own expense;

And I further agree that ASSIGNEES will, upon its request, be provided promptly with all pertinent facts and documents relating to said application, said invention and said Letters Patent and legal equivalents in foreign countries as may be known and accessible to me and will testify as to the same in any interference or litigation related thereto;

And I hereby covenant that no assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with this assignment and sale.

And I hereby authorize and request my attorney(s) of record in this application to insert the serial number and filing date of this application in the spaces that follow: Serial Number: 09/458,830, Filing Date: 12/19/99.

This assignment executed on the dates indicated below.

KOICHI IIDA

Name of first inventor

Execution date of U.S. Patent Application

Kanagawa, JAPAN

Residence of first inventor

Koichi Iida

Jan. 05. 2000

Signature of first inventor

Date of this assignment

ICHIRO SAITO

Name of second inventor

Execution date of U.S. Patent Application

Kanagawa, JAPAN

Residence of second inventor

Ichiro Saito

January 5,
2000

Signature of second inventor

Date of this assignment

SHINICHI TACHIZONO

Name of third inventor

Execution date of U.S. Patent Application

Chiba, JAPAN

Residence of third inventor

Shinichi Tachizono

Jan. 20. 2000

Signature of third inventor

Date of this assignment

TAKESHI YAMAGISHI

Name of fourth inventor

Execution date of U.S. Patent Application

Chiba, JAPAN

Residence of fourth inventor

Takeshi Yamagishi

Jan. 25, 2000

Signature of fourth inventor

Date of this assignment

Name of fifth inventor

Execution date of U.S. Patent Application

Residence of fifth inventor

Signature of fifth inventor

Date of this assignment

Name of sixth inventor

Execution date of U.S. Patent Application

Residence of sixth inventor

Signature of sixth inventor

Date of this assignment

Name of seventh inventor

Execution date of U.S. Patent Application

Residence of seventh inventor

Signature of seventh inventor

Date of this assignment

DC013762