PATENT ASSIGNMENT

SUBMISSION TYPE: NEW ASSIGNMENT

NATURE OF CONVEYANCE: ASSIGNMENT

CONVEYING PARTY DATA

<table>
<thead>
<tr>
<th>Name</th>
<th>Execution Date</th>
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</thead>
<tbody>
<tr>
<td>Hiroyuki HIRAKAWA</td>
<td>04/28/2010</td>
</tr>
<tr>
<td>Ayae NAGAOKA</td>
<td>04/28/2010</td>
</tr>
<tr>
<td>Yasuo IMURA</td>
<td>04/28/2010</td>
</tr>
<tr>
<td>Tadashi IWAMATSU</td>
<td>04/28/2010</td>
</tr>
</tbody>
</table>

RECEIVING PARTY DATA

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Postal Code: 545-8522

PROPERTY NUMBERS Total: 1

<table>
<thead>
<tr>
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<td>Application Number</td>
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CORRESPONDENCE DATA

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ATTORNEY DOCKET NUMBER: 1035-981
NAME OF SUBMITTER: H. Warren Burnam, Jr.
ASSIGNMENT OF PATENT APPLICATION

(Inventors)  Hiroyuki HIRAKAWA
            Ayae NAGAOKA
            Yasuo IMURA
            Tadashi IWAMATSU

In consideration of the sum of one dollar ($1.00) and other good and valuable considerations paid to each of the undersigned, the undersigned agree(s) to assign, and hereby does assign, transfer and set over to

SHARP KABUSHIKI KAISHA
of 22-22 Nagaike-cho Abeno-ku Osaka-shi Osaka 545-8522 Japan,
(hereinafter designated as the Assignee) the undersigned's entire right, title and interest for the United States, its territories, dependencies and possessions, and for the country of

be granted therefor, known as

ELECTRON EMITTING ELEMENT, ELECTRON EMITTING DEVICE, LIGHT EMITTING DEVICE, IMAGE DISPLAY DEVICE, AIR BLOWING DEVICE, COOLING DEVICE, CHARGING DEVICE, IMAGE FORMING APPARATUS, AND ELECTRON-BEAM CURING DEVICE (Case No. - )
for which the undersigned has (have) executed on even date herewith an application for patent in the United States of America or, if not on even date, then has executed on
or has already filed in
U.S. appln. Serial No. , filed on
The undersigned acknowledges an obligation of assignment of this invention to said assignee at the time the invention was made.

The undersigned agree(s) to execute all papers and documents necessary in connection with the application or any interference which may be declared and any continuing or divisional applications thereof and also to execute separate assignments in connection with such applications as the Assignee may deem necessary or expedient and further to perform any act which may be necessary in connection with claims or provisions of the International Convention for Protection of Industrial Property or similar agreements.

The undersigned agree(s) to perform all affirmative acts which may be necessary to obtain a grant of a valid United States patent to the Assignee.

The undersigned hereby authorize(s) and request(s) the Commissioner of Patents to issue any and all Letters Patent of the United States resulting from said application or any division or divisions or continuing applications thereof to the said Assignee, as Assignee of the entire interest, and hereby covenants that he has (they have) full right to convey the entire interest herein assigned, and that he has (they have) not executed and will not execute, any agreement in conflict herewith.

The undersigned hereby grant(s) the firm of NIXON & VANDERHYE P.C. the power to insert on this assignment any further identification which may be necessary or desirable in order to comply with the rules of the United States Patent Office for recordation of this document. It is understood and agreed that ASSIGNEE'S attorneys Nixon & Vanderhye P.C. have represented only ASSIGNEE and will continue to represent only ASSIGNEE with respect to this invention.

In witness whereof, executed by the undersigned on the date(s) opposite the undersigned signature(s).