Your business won’t grow if you don’t own the best IP: Auction of high power LED patent portfolio

- 174 LED patents
- Evidence of use available for car headlights & smartphones
- Market size >USD 16 billion

Auction on February 28, 2020
High power LED packages are used in automotive applications, smartphones & human centric lighting.
### Evidence of use available for car headlights & smartphones

<table>
<thead>
<tr>
<th>Patent Number</th>
<th>Name</th>
<th>Priority Date</th>
<th>Estimated Expiration Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>US 7321109</td>
<td>Characteristic and/or use-based electromagnetic radiation generation</td>
<td>2003-04-23</td>
<td>2024-04-23</td>
</tr>
<tr>
<td>US 7982234 &amp; DE 102009025015 (open DE application)</td>
<td>Light emitting device and method for fabricating the same</td>
<td>2008-07-08</td>
<td>2029-07-06</td>
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<tr>
<td>US 8247244</td>
<td>Light emitting device and method of manufacturing the same</td>
<td>2008-06-19</td>
<td>2028-10-29</td>
</tr>
<tr>
<td>US 8247792</td>
<td>Light emitting diode having modulation doped layer</td>
<td>2008-08-20</td>
<td>2029-08-12</td>
</tr>
<tr>
<td>US 8309971, US 9018669 &amp; US 9793440</td>
<td>Light emitting diode having electrode pads</td>
<td>2010-01-07</td>
<td>2031-04-04</td>
</tr>
<tr>
<td>US 8395166</td>
<td>Light emitting diode and method of fabricating the same</td>
<td>2007-12-28</td>
<td>2029-04-19</td>
</tr>
</tbody>
</table>
# High power, mid power & CSP LED package patents

<table>
<thead>
<tr>
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<th>Name</th>
<th>Priority Date</th>
<th>Estimated Expiration Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>US 8633503</td>
<td>Wafer level light emitting diode package and method of fabricating the same</td>
<td>2010-09-30</td>
<td>2032-01-18</td>
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<tr>
<td>US 8791483</td>
<td>High efficiency light emitting diode and method for fabricating the same</td>
<td>2010-03-31</td>
<td>2031-07-29</td>
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<tr>
<td>US 8796710</td>
<td>Light emitting diode package</td>
<td>2010-05-24</td>
<td>2031-11-17</td>
</tr>
<tr>
<td>US 9093615</td>
<td>LED module, method for manufacturing the same, and LED channel letter including the same</td>
<td>2011-03-11</td>
<td>2033-10-21</td>
</tr>
</tbody>
</table>

The portfolio includes high & mid power LED package and CSP (Chip Scale Package) patents. Mid power LED packages are used in TV sets, monitors, notebooks and general lighting. CSP are getting more popular because of their small size.
Market size >USD 16 billion

The global LED package market is >USD 16 billion large.

The high power LED market will grow from USD 4.5 billion in 2019 to USD 5.6 billion by 2024 (MarketsandMarkets).

Demand from mobile phone users for high-quality image capture in dim light compels smartphone makers to include high power LED in flash lighting modules.

LED makers are Cree (US), Nichia (Japan), Osram (Germany), Samsung (South Korea), Everlight (Taiwan), Lumileds (Netherlands), Epistar (Taiwan), LG Innotek (South Korea), Broadcom (US), MLS (China), and the seller of this portfolio Seoul Semiconductor (South Korea).
## Auction process

### How to bid

- You can place your bid per email, phone or on the GoodIP platform.
- You can place your bid on or before February 28, 2020. Bids are sealed and not public.

### What to bid

- You can place an all cash up-front bid or a hybrid bid (up-front and back-end). Cash up-front bids are preferred.
- You can place a bid for subsets of the portfolio. Bids for entire portfolio are preferred.
- The reserve price is not public. We may reject any bid and withdraw any or all patents for sale at any time.

### After your bid

- We will select the best buyer together with the seller.
- We will inform the winning bidder on March 9, 2020. Closing is expected to occur before March 31, 2020 subject to signing of a customary patent purchase agreement.
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We may reject any bid and withdraw any or all patents for sale at any time.

A binding contract is not concluded until the bid has been accepted by the seller and a patent purchase agreement is signed.

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Auction on February 28, 2020
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Dr. Bastian July
GoodIP CEO
Phone: +49 89 3078 1244
Email: bastian.july@goodip.io
www.goodip.io