Cost of ownership

For the case of iPhone 7 plus case
(5.5 inches, 83.4 cm²)

<table>
<thead>
<tr>
<th>Machine Price</th>
<th>500.000 Euro</th>
</tr>
</thead>
<tbody>
<tr>
<td>Down time</td>
<td>3%</td>
</tr>
<tr>
<td>Gold price</td>
<td>34,525.00</td>
</tr>
<tr>
<td>(May 2018)</td>
<td></td>
</tr>
<tr>
<td>Deposition time</td>
<td>1 hour</td>
</tr>
<tr>
<td>Production</td>
<td>25,500 pieces/yr</td>
</tr>
<tr>
<td>Thickness of coating</td>
<td>1 µm</td>
</tr>
<tr>
<td>Coating cost/yr</td>
<td>93,317 Euro</td>
</tr>
<tr>
<td>Material cost/yr</td>
<td>1,417.560 (45 Kgs)</td>
</tr>
<tr>
<td>Energy/year (1 kWh machine)</td>
<td>8.740 Euro (34,800 kWh)</td>
</tr>
<tr>
<td>Cost of labor/yr</td>
<td>50,000 Euro</td>
</tr>
<tr>
<td>Total cost/yr</td>
<td>1,245,842 Euro</td>
</tr>
</tbody>
</table>

Cost of Coating: 6.16 Euro/piece  V.S. Market price: >1,000 Euro/piece

For the case of Pt electrode (10x10 cm²)
Double side coating

<table>
<thead>
<tr>
<th>Machine Price</th>
<th>500.000 Euro</th>
</tr>
</thead>
<tbody>
<tr>
<td>Down time</td>
<td>3%</td>
</tr>
<tr>
<td>Platinum price</td>
<td>(May 2018) 25 (Euro)</td>
</tr>
<tr>
<td>Deposition time</td>
<td>1 hour</td>
</tr>
<tr>
<td>Production</td>
<td>101,566 pieces/yr</td>
</tr>
<tr>
<td>Thickness of coating</td>
<td>1 µm</td>
</tr>
<tr>
<td>Coating cost/yr</td>
<td>93,517 Euro</td>
</tr>
<tr>
<td>Material cost/yr</td>
<td>1,893,860 (43 kg Pt)</td>
</tr>
<tr>
<td>Energy/year (1 kWh machine)</td>
<td>8,760 Euro (34,800 kWh)</td>
</tr>
<tr>
<td>Cost of labor/yr</td>
<td>50,000 Euro</td>
</tr>
<tr>
<td>Total cost/yr</td>
<td>1,245,842 Euro</td>
</tr>
</tbody>
</table>

Cost of Coating: 12.2 Euro/piece  V.S. Market price: 40 Euro/piece

About us

W&L Coating Systems GmbH is a technology-focused company creating, supporting original thin film and nano technology research, development, and production. Our products and services are aimed at selected areas of physical and chemical vapor deposition technology.

Our highly experienced and dedicated team of specialists offers a comprehensive knowledge base for process solutions of metallic, ceramic and organic coatings on customized substrates.

NMS450 nobel metal coating system

thin-film technology at its best

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**What is magnetron sputtering coating?**

Magnetron sputtering coating is a method of forming a thin film on a substrate by the following processes:

1. Evaporation of the target material.
2. Ionisation of the sputtered atoms.
3. Deposition of the sputtered atoms on the substrate.

**Features of sputtering coating:**

1. Excellent purity of deposited films.
2. High deposition rates.
3. High precision in the deposition process.

**Competitive advantage**

2. Cost-effective and energy-efficient.
3. High-quality coatings.
4. Reduced pollution.

**Markets**

1. Luxury goods.
2. Electronics.
3. Catalysis.
4. Electrochemistry.
5. Protective coatings.

**Applications:**

- **Luxury goods:**
  - Gold, Platinum, Rhodium, Palladium, Ruthenium.
  - We can coat a full range of precious metals for any custom applications.

- **Electronics:**
  - Electronic components made with gold are highly reliable.
  - Solid state electronic devices use very low voltages and currents which are easily interrupted by corrosion or failure at the contact points. Gold is a highly efficient conductor in this regard, as the tiny current and minimal heat of the corrosion. Gold is often used in protection, relay and relay contacts, soldered joints, connecting wires and connectors.

- **Precious metal catalysis:**
  - Pt, Au, Pd, Rh, Ru, Ir.
  - Precious metal catalysis for catalysts.

- **Electrochemistry:**
  - Electrochemical sensors (e.g., Pt oxygen sensor).
  - Electrochemical synthesis (e.g., water splitting).

**Applications:**

- **Coating for electrochemical electrodes:**
  - Applications:
    1. Electrochemical sensors (e.g., Pt oxygen sensors).
    2. Electrochemical synthesis (e.g., water splitting).

**Highlights of the machine:**

1. flexibility: can coat at the Pt group metals (including Pt).
2. The coated film has a longer lifetime than by electrochemical methods because sputtered thin films are much denser.

**The picture of our machine and the products**

**The coating of Cu done by NMS450**

**Our solution**