Electroplating with Manufacture of Electrochemicals

(Electrochemical Cell, Ecm, Electroplating of Aluminium, Chromium, Copper, Gold, Cobalt, Iron, Lead, Nickel, Silver, Alloy, Platinum, Palladium, Rhodium, Zinc, Plastics, Barrel, Tin, Electrodeposition)
Electroplating is an electro deposition process for producing a dense, uniform, and adherent coating, usually of metal or alloys, upon a surface by the act of electric current. The term is also used for electrical oxidation of anions onto a solid substrate, as in the formation silver chloride on silver wire to make silver/silver-chloride electrodes. Electroplating is primarily used to change the surface properties of an object (e.g. abrasion and wear resistance, corrosion protection, lubricity, aesthetic qualities, etc.), but may also be used to build up thickness on undersized parts or to form objects by electroforming.

Electrochemical deposition is generally used for the growth of metals and conducting metal oxides because of the following advantages:
(i) The thickness and morphology of the nanostructure can be precisely controlled by adjusting the electrochemical parameters,
(ii) relatively uniform and compact deposits can be synthesized in template-based structures, (iii) higher deposition rates are obtained, and (iv) the equipment is inexpensive due to the non-requirements of either a
high vacuum or a high reaction temperature. An electrochemical process where metal ions are transferred from a solution and are deposited as a thin layer onto surface of a cathode.

In the recent years, developments in electronic and chemical engineering have extended the process of electroplating to a wide range of materials such as platinum, Alloy, Silver, Palladium, Rhodium, etc. The electroplating market is an application driven market, which depends largely on the net output of the manufacturing industry.

The electroplating technology allows electro-deposition of multiple layers as thin as one-millionth of a centimeter which makes it an indispensable part of the semiconductor industry. Rising demand for computing devices is expected to create significant market opportunities for electroplating service providers. Growing net output of manufacturing industry, rising demand for consumer goods which mandates more surface finishing services, growth of the electronics industry are some of the key factors driving the growth of the global electroplating market.

The global electroplating market was valued above US$ 14,540.5 Mn in
2016 and is expected to expand at a CAGR of 3.7% to cross US$ 21,160.0 Mn by the end of 2026. The global electroplating market was valued above US$ 14,540.5 Mn in 2016 and is expected to expand at a CAGR of 3.7% to cross US$ 21,160.0 Mn by the end of 2026. The Automotive and Electrical & Electronics segments are estimated to collectively hold about 65% of the total value share of the global electroplating market by the end of 2026.

The demand for copper and nickel as raw metals for electroplating is projected to surge at a faster pace, reaching a combined global market value share of more than 60% through 2026. Machinery Parts & Components segment, expanding at a CAGR of 3.8% over the forecast period, is expected to represent 10.2% share of the total incremental opportunity created between 2016 and 2026.

Automotive: Automotive segment was estimated to be valued above US$ 4,300 Mn by the end of 2016 and is projected to expand at a CAGR of 3.9% over the forecast period to reach beyond US$ 6,440 Mn by 2026 end. The segment is expected to create a total incremental opportunity of more than US$ 2,000 Mn between 2016 and 2026.

Electrical and Electronics: Electrical & Electronics segment was estimated
to be valued at over US$ 5,000 Mn by 2016 end and is projected to expand at a CAGR of 3.9% over the forecast period to reach a value more than US$ 7,300 Mn by 2026 end.

Aerospace & Defense: The segment is projected to create incremental $ opportunity of more than US$ 750.9 Mn during the forecast period.
Jewellery: Jewellery segment is expected to reach a market value of more than US$ 950 Mn by 2026 end.

Machinery Parts & Components: This segment is expected to create total incremental opportunity of less than US$ 670 Mn between 2016 and 2026.

Others: The segment is expected to expand a CAGR of 3.6% and lose 10 BPS between 2016 and 2026.

The book gives comprehensive coverage of Electroplating Uses, Application Manufacturing, Formulation and Photographs of Plant & Machinery with Supplier’s Contact Details. The major contents of the book are Metal Surface Treatments, Electrolytic Machinery

It is a very useful book that covers all important topics of Electroplating. It will be also a standard reference book for professionals, entrepreneurs, those who are interested in this field can find the complete of Electroplating. It will be very helpful to consultants, new entrepreneurs, technocrats, research scholars, libraries and existing units.
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