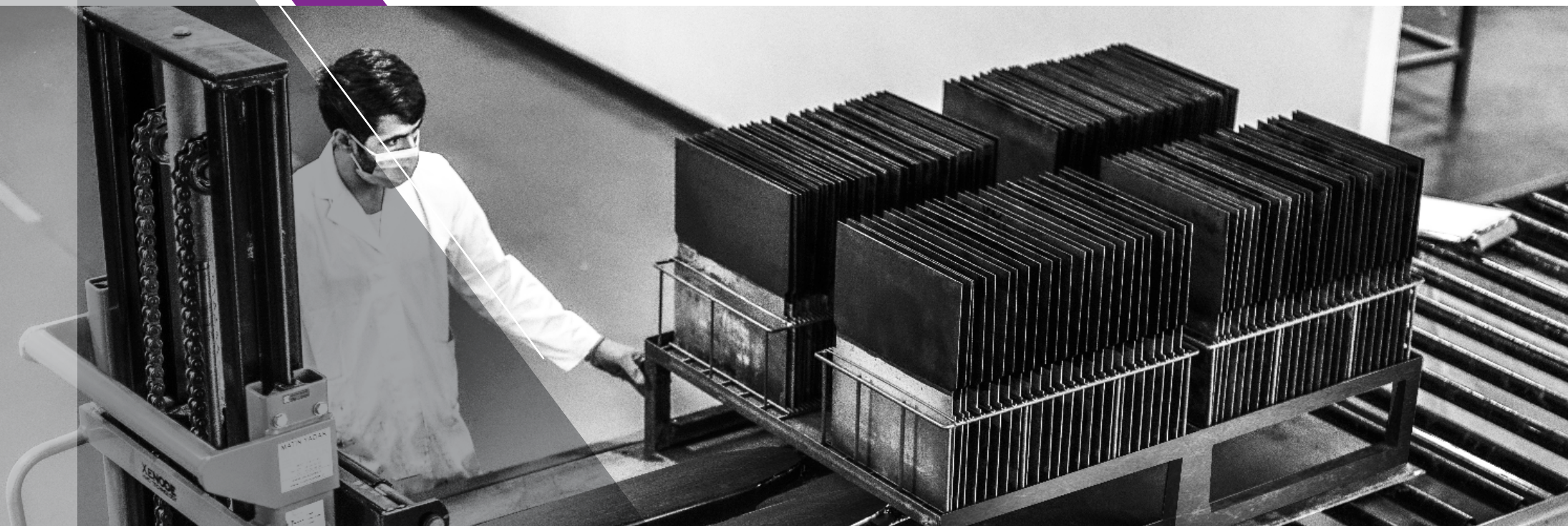




High Quality Coated DSA Titanium Anodes



Our Performance Up to Now:

- ▶ Over 6000 hypochlorite production anodes
- ▶ Over 700 $\text{KgCl}_2 / \text{hr}$
- ▶ Over 500 m^2 coated anodes (area)

XENODE is a manufacturer of electrolyzer systems and specializes coating electrodes (MMO Anodes and Electrochlorination facilities) used in various industries such as oil, gas and petrochemical, cathodic protection, chlorine alkaline, water and wastewater, power stations, food industries, textiles and so on.

Product

Some of our products are listed below:

- ▶ On-site Hypochlorite generators including Bipolar Anodes, Monopolar Anodes, Tubular anodes
- ▶ Chloralkali systems (including Anode and Cathode)
- ▶ Hydrogen generators
- ▶ Chlorate anodes

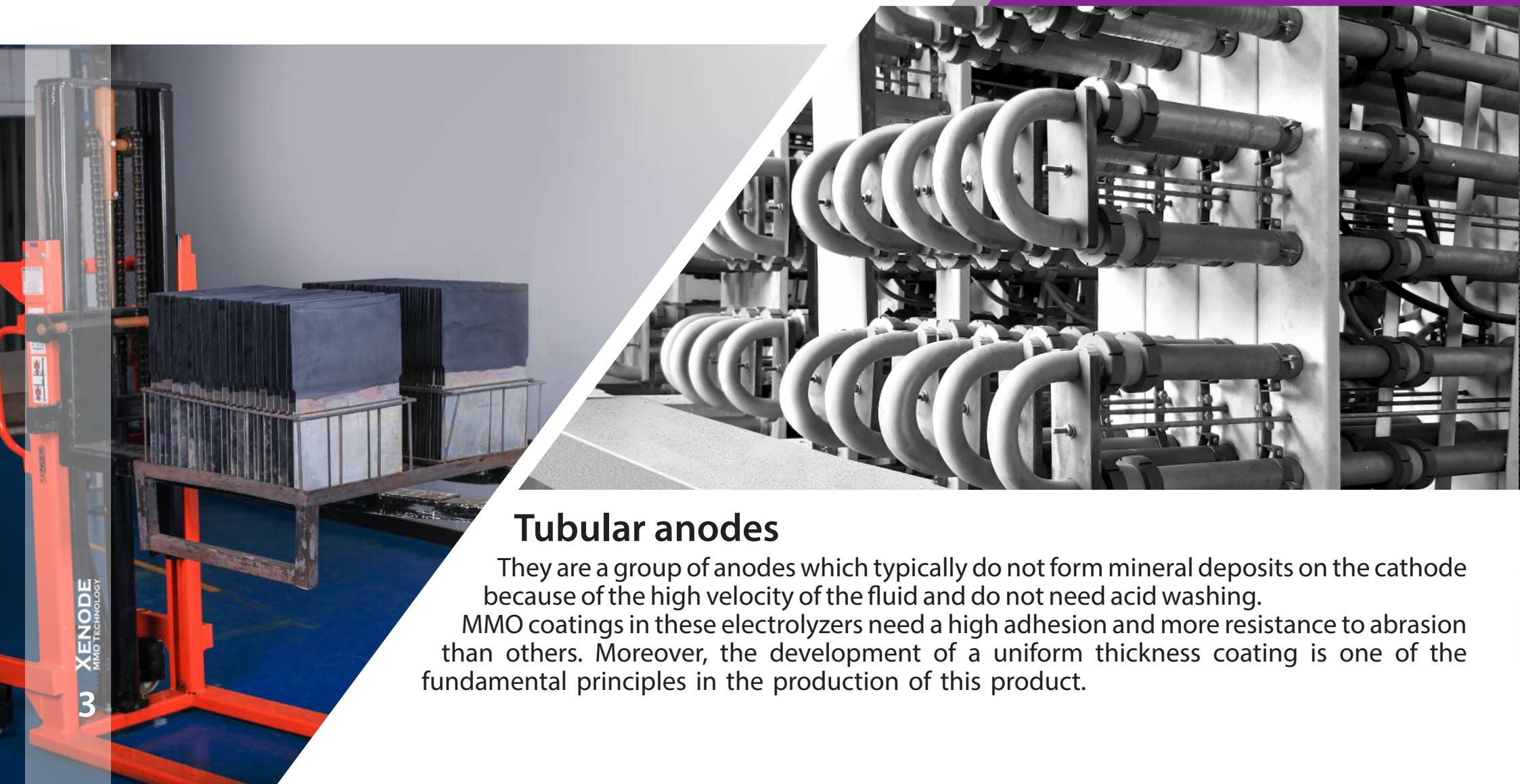
Advantages

- ▶ Low voltage
- ▶ Fully Mud-Cracked microstructure presenting high performance of the coating
- ▶ Engineering Consulting
- ▶ 3 to 8 Years Guarantee (Depends on coating type)
- ▶ Full Technical Support
- ▶ World-class Quality Management
- ▶ Comparative Price



III Anode for Hypochlorite Production

Sodium hypochlorite generator is a device in that the low concentration salt water is electrolyzed by electrodes (Anodes and Cathodes), electrochemical reaction happens and sodium hypochlorite is generated from NaCl finally.



Tubular anodes

They are a group of anodes which typically do not form mineral deposits on the cathode because of the high velocity of the fluid and do not need acid washing.

MMO coatings in these electrolyzers need a high adhesion and more resistance to abrasion than others. Moreover, the development of a uniform thickness coating is one of the fundamental principles in the production of this product.

ChlorAlkali Technology

There are three basic processes for the producing chlorine and caustic soda from brine including (Mercury Cells, Diaphragm Cells and Membrane Cells respectively Based on Generation) which Xenode provides refurbishment and recoating of All Generations We also able to provide customer service for the implementation of plants from A to Z in each of these systems.



Project Description

- Refurbishing and recoating chlor-alkali anodes (membrane cells)

Type of Project

- Engineering, Construction, pre- commissioning

Number of Electrodes

- 200 sets of anodes & Cathodes



Project Description

- Refurbishing and recoating chlor-alkali anodes (mercury cells)

Type of Project

- Engineering, Construction, pre- commissioning

Number of Electrodes

- 72 sets of anodes

ChlorAlkali Anodes

Life Time	4 to 8 years (Depends on Generation)
Operating Temperature	90 °C
Current Dentsity	5500 A/ m ² to 11000 A/ m ² (Depends on Genneration)

Hydrogen generators

Water electrolysis is a crucial technique used by renewable energy to split water molecules into hydrogen and oxygen.

Hydrogen production in a Water electrolysis cell is similar to any other electrolysis cell consisting of anode, cathode, electrolyte (liquid, solid or polymer). An electrical circuit imposed by the cell and Hydrogen gas (on Cathode) and Oxygen gas (on Anode) are released as products.

Operating Conditions

Electrolyte	KOH or NaOH (25 - 30% w/w)
Temperature	70 - 80 °C (design) or higher depending from the STACK / BOP (balance of plant) design temperature
Pressure	Up to 60 bar(g) (design) depending from the STACK/BOP design pressure
Delta Pressure	0.2 bar (design) differential pressure between anodic and cathodic chambers
Current Density	Up to 12 KA/m ²

Electrolysers for Chlorate production

MMO coating has been used as a catalyst on the anode surface of these electrolysers not only to speed up the process but also to optimize the chlorate output reaction rate to the lowest applied potential and power consumption, and Lowest Oxygen Content.

Laboratory

ISO 17025 helps laboratories to show that they are functioning properly and producing accurate results, thus increasing national and worldwide trust in their work. Thus xenode sets up a special laboratory to accomplish the following objectives:

- ▶ Validation of test methods
- ▶ Evaluation of uncertainty of results
- ▶ Data analysis



Our tests

- ▶ Standard Electrode Potential (SEP)
- ▶ Cyclic Voltammetry (CV)
- ▶ Chronopotentiometry
- ▶ Chronoampermetry
- ▶ Electrochemistry Impedance Spectroscopy (EIS)
- ▶ Accelerated Lifetime Test (ALT)
- ▶ Adhesion Test

Our Customers

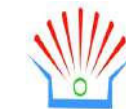
شرکت پتروشیمی دماوند
Damavand Petrochemical Company



شرکت مجتمع گاز پارس جنوبی
s.p.g.c



شرکت پتروشیمی پردیس
Pardis Petrochemical Co.



شرکت پتروشیمی مبین
Meban Petrochemical Co.



شرکت پتروشیمی اروند
Arund Petrochemical Co.



Petro
Havah
Group



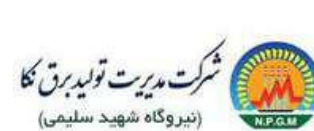
شرکت پتروشیمی آبادان
Abadan Petrochemical Co.



شرکت مهندسی توسعه آب آسیا
Asia Water



شرکت مدیریت تولید برق نکا
(نیروگاه شهید سلیمی)
N.P.G.M





MAKES THE WORLD GREEN



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