



# ABIS Groundbreaking Green Tech

## Ultimate Solution to Tackle Acid Pickling Bottleneck

In a time of ever-increasing awareness for environmental protection, circular economy is taken as a social responsibility which the world requires more and more on factories. For fastener factories, recycling waste liquids from fastener surface treatment is a tough nut to crack. Statistics by Environmental Protection Administration reveals that close to a million tons of waste acid liquids in Taiwan are filed to the Administration, growing 1.3 times every year. Furthermore, The handling cost of used waste acid liquids is extremely high. Untamable cost rise indeed stretches the vendors thin in a chaotic time of heightened freight rate, wage, land price and virtually anything. **“Can’t we replace acid pickling?”** This is the issue that ABIS innovation Technology met head-on. The ultimate solution to the root cause is an innovative technology developed through a cross-generation effort by the ABIS team.

Before AFP



After AFP



## Full Replacement of Acid Pickling: ABIS “AFP” Non-Acidic Manufacturing Process

Conventionally, fastener factories use acid pickling to remove surface rust. It is impossible to remove the oxide layer simply by sand blasting, so they still have to go through acid pickling to make it work. **Acid Free Pickling (AFP) is a new alternative technology for acid pickling.** AFP has acquired patents in multiple countries and is applicable to various work pieces, stamped parts, wire rods and fasteners. **Without using acid liquids, AFP combines the strengths and excludes the drawbacks of both sand blasting and shot peening to form a revolutionary non-acidic processing method.** Its top feature is **rust removal, only by doing it “physically” to achieve the depth of processing made by acid pickling and soaking,** eliminating the aftermath of chemical pollution and the cost of dealing with acid liquids. Other benefits include improved strength of post-electroplating and coating, shorter manufacturing process, cost saving and more profits. This unique and industry-leading technology earned AFP the gold medal award in 2021 Taiwan Innotech Expo Invention Contest.

## Packaged & Tailor-made Surface Treatment

In post-electroplating and coating, ABIS offers the exclusive “acid free blackening” which finishes blackening in just 5 seconds under room temperature. This treatment is acid, toxin and pollution free, preventing scratch and abrasion and resisting salt spray. ABIS combines tailor-made blast machines (for non-acidic removal of oxide layer) with post-electroplating and coating into a total processing package for handling metal parts. For steel plates, the company tailor-made vertical blast machines, as well as dedicated blast machines for wires rods, hanger type and circular belt type blast machines for forged parts, fasteners and components. For you being owners of fasteners, wire rods, hardware parts, alloys, hand tools, metal plates and tubes, ABIS offers customized, acid free and eco-friendly heat treatment. The bargaining chips are created for you to secure overseas customer orders in the international market and massively boost your price competitiveness!



### AFP in a single equation

Sand Blasting	Shot Peening	AFP Strengths
<ol style="list-style-type: none"> <li>1. Only for cleaning the surface.</li> <li>2. Unable to fully remove the oxide layer.</li> <li>3. Incapable of one-shot mass-treating.</li> </ol>	<ol style="list-style-type: none"> <li>1. Only applicable to thick metal plates.</li> <li>2. Strong force that will penetrate thin plates.</li> <li>3. Uneven surface result. High discrepancy.</li> </ol>	<ol style="list-style-type: none"> <li>1. Physically blasting off oxide layer and equalizing the surface properties.</li> <li>2. Flexible use of recyclable medium (carborundum, silica sand, Zonggang sand) depending on the properties of a work piece.</li> <li>3. Ultra-high-speed centrifugal impeller blasts from different angles at 240km/hr.</li> <li>4. Adjustable force output via inverter, applicable to thick and thin plates.</li> <li>5. All process done in a closed cabin. Pollution free.</li> </ol>

