

## 酸性氯化钾镀锌——耐蚀性的最佳选择 Acid Chloride Zinc Plating - Best Choice for Corrosion Resistance

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李伟善教授的研发队伍  
Professor Weishan Li's Research Team

电镀行业一直认为相对碱性镀锌和碱性镀锌而言，酸性镀锌的耐蚀性是很差的。然而，华南师范大学李伟善教授主持的大量研究，却挑战了这种传统看法。

李教授的研究团队用扫描电子显微镜对酸性镀锌，碱性镀锌和碱性无氰镀锌溶液的镀锌层微观结构逐层进行仔细分析。对不同的酸性镀锌工艺也进行了比较。观察电镀溶液和镀锌层的各种各样的特性，包括阴极效率，有机杂质，镀层外观（光亮度），泡沫形态，钝化接受能力。

研究表明，酸性镀锌工艺，特别是先进的，如哥伦比亚化工的EXTREME 110 钾盐镀锌工艺的镀锌层，其耐蚀性能达到甚至超过氰化镀锌和碱性镀锌。这或许可以说明为什么酸性镀锌能广泛应用于汽车零部件行业。镀锌工厂应坚持挑战传统观念，考虑使用先进的酸性镀锌工艺，如EXTREME 110 钾盐镀锌工艺。

科学就在你身边！

It has long been thought that the corrosion resistance associated with acid zinc plating is inferior, compared to cyanide zinc and alkaline zinc. However, an extensive research project headed by Professor Weishan Li of South China Normal University has challenged this conventional wisdom.

Professor Li's team of researchers examined the microstructure layer by layer using electron microscopy on deposits from the three zinc plating baths. Several different proprietary acid zinc processes were

also compared. Characteristics were observed in both the zinc deposits as well as in the plating solutions, including cathode efficiency, organic impurities, deposit appearance (brightness), foam formation, and passivation receptivity.

The research shows that deposits from acid zinc, especially from advanced processes like Columbia Chemical's EXTREME 110, meet or exceed the corrosion resistance provided by cyanide and alkaline zinc. Perhaps, this can account for the extensive use of acid zinc plating by the automobile components industry. Zinc platers should continue to challenge the conventional wisdom, and consider installing an advanced acid zinc plating process like EXTREME 110. Science is on your side!

## 美德耐化工扩充技术支持能力 Metalite Chemical Expands Technical Support Capabilities

美德耐化工的总经理马冲先生，一直认为提供技术支持是非常重要的。所以，2007年公司迁址时，马先生确保有足够大地方去容纳公司不断发展所需的由技术主管李文波先生领导的技术支持人员。

公司也加大设备和人员的投入，购买一台全新的X射线分析仪。“我们对美德耐化工援助客户的技术能力印象非常好”，哥伦比亚化工技术副总裁瑞克·荷兰先生和研发部化学师安迪·锐克先生评价道。最近他们曾访问美德耐化工，并作了技术交流和培训。

Mr. Ma Chong, general manager of Metalite Chemical, understands the importance of technical support. That is why he moved the company in 2007. Mr. Ma made sure that the location would be large enough to house the company's growing team of technical support personnel, guided by Mr. Wenbo Li, technical director.

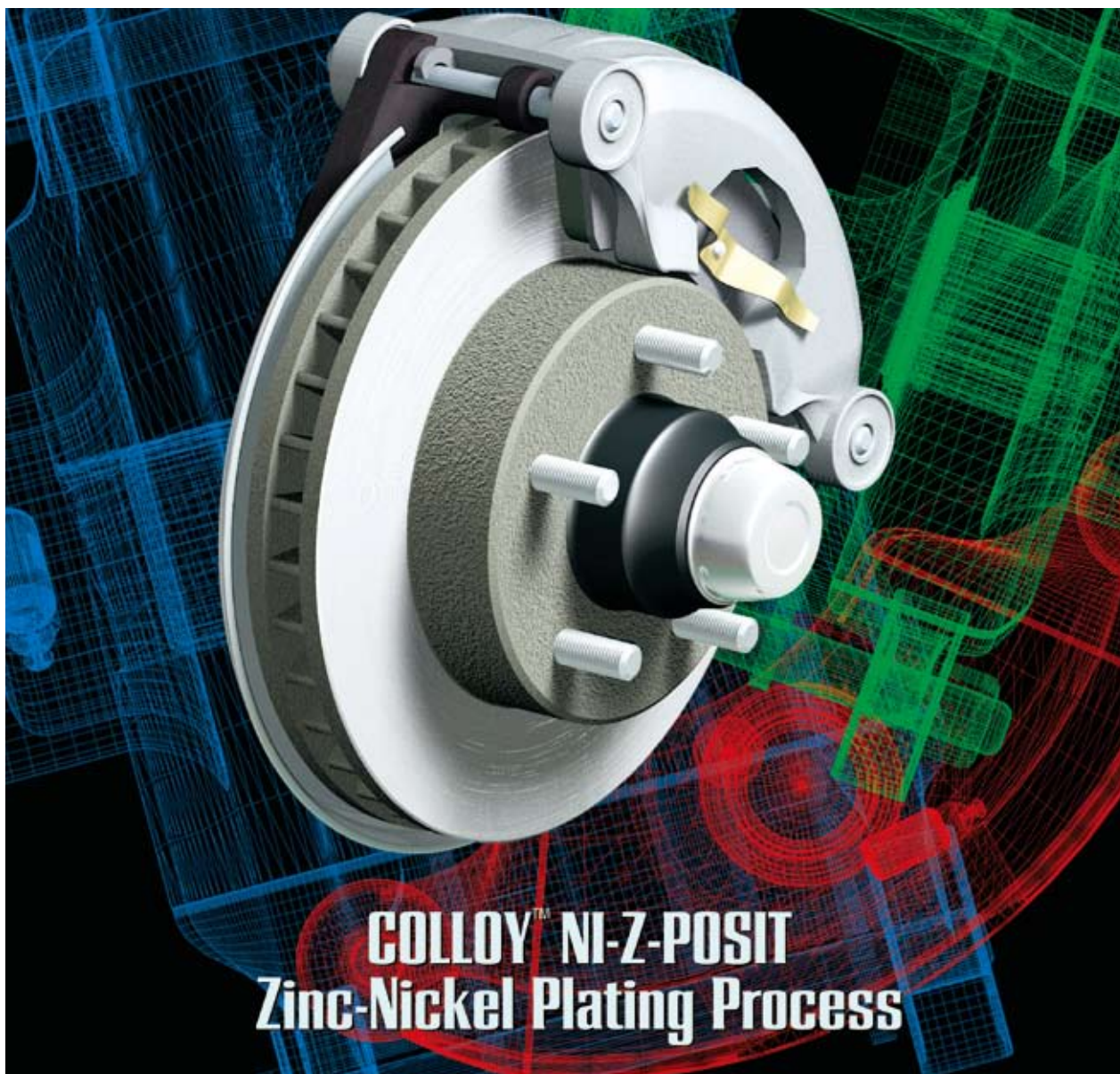
To further improve its technical capabilities, the company recently purchased a brand new Fischerscope X-Ray Unit. "We are highly impressed with Metalite's technical abilities to assist customers," observed Mr. Rick Holland, vice-president, technology at Columbia Chemical. Mr. Holland and Mr. Andy Recker, R&D chemist, recently visited Metalite Chemical for technical exchange and training.



瑞克·荷兰先生(左)和安迪·锐克先生(右)提出技术意见  
Rick Holland (left) and Andy Recker (right) offering technical advice.



美德耐化工的新X射线分析仪  
Metalite Chemical's new Fischerscope X-Ray Unit.



高性能的汽车电镀要求最佳的工艺。哥伦比亚化工让你掌握主动，应对需求。哥伦比亚化工的COLLOY NI-Z-POSIT碱性锌镍合金电镀工艺，能产生非常光亮，延展性好（含镍量高）的锌镍合金镀层，是满足当今汽车行业技术规范的理想选择：

- ✓ 镀层含镍量 10-15%
- ✓ 最适用于车盖下面接触到高温的零件，例如空调零件，油管，紧固件，刹车部件等。
- ✓ 在所有的电流密度区，镍分布和厚度都非常良好和均匀
- ✓ 符合最严格的耐蚀性测试要求

所以当你想到锌镍合金，请想到COLLOY NI-Z-POSIT锌镍合金工艺，请致电哥伦比亚化工。

High performance automotive plating demands the very best processes. Columbia Chemical can put you in the driver's seat. Columbia's COLLOY NI-Z-POSIT alkaline plating process produces a bright, ductile (high nickel) zinc-nickel deposit that is ideal for meeting today's demanding automotive specifications:

- ✓ 10 - 15% nickel in the deposit.
- ✓ Perfect for under-the-hood components that come into contact with high heat, such as air conditioning components, fuel lines, fasteners and brake components.
- ✓ Best, most uniform thickness and nickel distribution across all current density areas.
- ✓ Meets the most severe corrosion test requirements.

So when you think zinc-nickel, think COLLOY NI-Z-POSIT... and call Columbia Chemical.

## **锌镍合金电镀—选择COLLOY™ NI-Z-POSIT**

### **COLLOY™ NI-Z-POSIT**

### **Your Zinc Alloy of Choice**

现今汽车高性能和长保修，同时必须替代镉电镀的趋势，迫使汽车制造商转向锌合金电镀。锌镍合金在耐蚀性、应用范围、以及替代镉方面优于所有其它锌合金。

哥伦比亚化工 COLLOY™ NI-Z-POSIT碱性锌镍合金电镀工艺能产生非常光亮、延展性好的锌镍合金镀层，十分符合现今汽车行业应用要求。COLLOY™ NI-Z-POSIT锌镍合金工艺生成的高含镍镀层，特别适合需要经久耐用的车盖下面接触到高温的零件，例如空调零件，油管，紧固件，刹车部件等。COLLOY™ NI-Z-POSIT锌镍合金工艺能在所有的电流密度区，生成镍分布均匀，厚度一致的良好镀层，符合最严格的盐雾测试要求。镀层延展性好，已成功应用于需后期成型加工的零件。溶液固有的碱性也能减少零件内部未镀表面被腐蚀。

我们的酸性氯化钾锌镍合金电镀 COLLOY™ AZN，镍含量同样高，在整个电流密度区分布相当均匀，并增加了对热处理钢或坚硬钢部件的电镀能力。

另外的哥伦比亚化工的锌合金电镀工艺还包括：COLLOY I-Z-POSIT锌铁合金工艺，碱性电镀工艺，能产生光亮，延展性好的锌铁镀层；COLLOY CO-Z-POSIT 锌钴合金工艺，碱性电镀工艺，能产生光亮、延展性好的锌钴镀层。

**Today's trend toward high performance vehicles and longer warranties, as well as the need to replace cadmium plating, has driven automotive manufacturers to turn to zinc alloy plating. Zinc nickel is superior to all other zinc alloys in terms of corrosion resistance and range of applications, including cadmium replacement.**

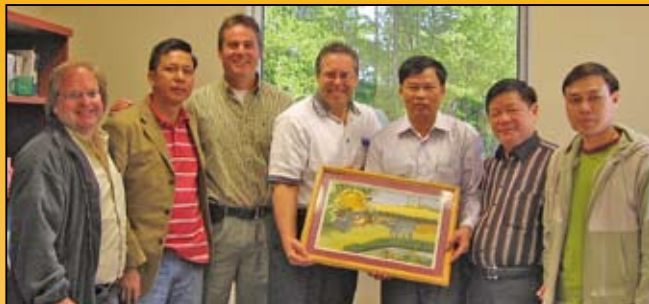
**Columbia COLLOY™ NI-Z-POSIT alkaline zinc-nickel plating process produces a bright, ductile zinc-nickel deposit that is ideal for today's demanding automotive applications. The high nickel-containing deposits produced with COLLOY™ NI-Z-POSIT are especially durable for under-the-hood components that come into contact with high heat, such as air conditioning components, fuel lines, fasteners and brake components.**

**COLLOY™ NI-Z-POSIT provides the best, most uniform thickness and nickel distribution across all current density areas and meets the most severe salt spray requirements. The deposit has good ductility and has been successfully used on parts requiring post-plate forming. The inherent alkalinity of the bath also reduces corrosion tendency of unplated, internal surfaces of parts.**

**Our acid-chloride version for zinc-nickel plating, COLLOY™ AZN, offers the same high nickel content and reasonably even distribution along all current densities - with the added ability of plating on heat-treated or hardened steels.**

**Additional zinc alloy plating processes available from Columbia include: COLLOY I-Z-POSIT for zinc-iron plating and COLLOY CO-Z-POSIT for zinc-cobalt plating.**

## MDI 越南拜访哥伦比亚 MDI VIETNAM VISITS COLUMBIA CHEMICAL



EMTC 的 Ho Viet Tam 先生送赠真丝刺绣图给 Bill Rosenberg 先生 (中)  
Mr. Ho Viet Tam of EMTC presents a silk embroidered picture to  
Bill Rosenberg (center).

## Idea 贸易公司在韩国釜山的 INTERFINISH' 08 中参展 IDEA TRADING EXHIBITS AT INTERFINISH'08 IN BUSAN



Idea 贸易的 Daekweon Jung 先生, Martin Gall 先生,  
Taebbak Metal 的李先生及 Brett Larick 先生  
Daekweon Jung of Idea Trading, Martin Gall, Mr. Lee of Taebbak Metal,  
and Brett Larick



## 用于电镀锌工件的 TRIVECTA® BLACK 100 三价铬黑色钝化剂简介 INTRODUCING TRIVECTA® BLACK 100 TRIVALENT CHROMATE FOR ZINCPLATED PARTS

经过两年多的开发和严格的现场生产验证, 哥伦比亚化工为电  
镀锌工件配套而研制了 TRIVECTA® BLACK 100 三价铬黑色钝化剂。  
TRIVECTA® BLACK 100 三价铬黑色钝化剂定获成功, 优点如下:

- 色彩黝黑明亮
- 膜厚, 表面均匀
- 高耐蚀性, 不易划伤
- 容忍超过 10000ppm 的锌积聚
- 无沉锭
- 即使停产一个月, 依然稳定
- 通过严格的现场生产验证

TRIVECTA® BLACK 100 三价铬黑色钝化剂是专家之选。

After more than two years of development and thorough  
field-testing, Columbia Chemical introduces TriVecta® Black  
100 Trivalent Chromate for zinc-plated parts.

TriVecta® Black 100 is destined to be a winner, with  
these benefits:

- Jet-black and glossy
- Thick, uniform finish
- Highly resistant to corrosion and scratches
- Tolerates more than 10,000 ppm zinc build-up
- Free of precipitation and sludge
- Stable, even after month-long shut-downs
- Thoroughly field-tested

TriVecta® Black 100 is the pick of the experts.

UPCOMING  
TRADE  
SHOWS

### ISF 2009 – Indian Surface Finishing Conference February 5-7, 2009



Mumbai, India  
Columbia Chemical will join with  
Indian partner, Consolidated Metal  
Finishing Ltd., at their booth  
Info: <http://www.mfai.org/>

### SUR/FIN '09 June 16-17, 2009



Louisville, Kentucky  
Booth # 349  
Info: [www.nasf.org](http://www.nasf.org)



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