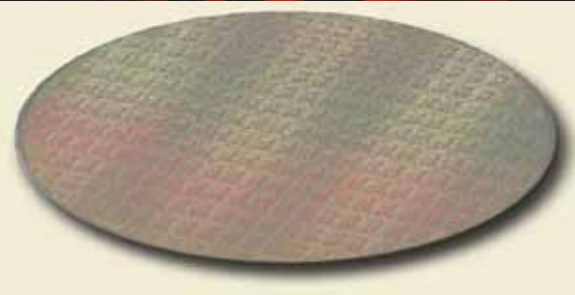




Exponent<sup>®</sup>

毅博



[www.exponentchina.com](http://www.exponentchina.com)

**Exponent is an engineering and scientific consulting firm that provides solutions to complex technical problems. We particularly excel in situations of high value and time pressure, where accuracy and speed of response are critical. We believe Exponent is the largest technical firm in the world that specializes in the investigation and analysis of failures and disasters.**

Our multidisciplinary team of scientists, physicians, engineers, and regulatory consultants performs in-depth research and analysis in more than 90 technical disciplines including:

- Biomechanics
- Buildings and Structures
- Civil Engineering
  - Geotechnical
  - Water Resources
- Construction Consulting
- Electrical Engineering and Semiconductors
- Engineering Management
- Environmental Sciences
- Health Sciences
  - Chemical Regulation and Food Safety
  - Epidemiology and Computational Biology
  - Exposure Assessment
  - Public Health and Industrial Hygiene
  - Toxicology and Mechanistic Biology
- Human Factors
- Materials Science
- Mechanical and Aeronautical Engineering
- Statistical and Data Sciences
- Technology Development
- Thermal Sciences
- Vehicle Engineering
- Visual Communications

毅博是一家科学和工程咨询公司，致力于为复杂的技术问题提供解决方案。毅博公司尤其擅长于准确高效地应对金额巨大且时间紧迫的工程技术难题。我们认为毅博是目前世界上最大的专长于事故与灾难调查和分析的技术公司。

我公司拥有一支由科学家、医生、工程师和管理顾问组成的跨学科团队，他们能在90多个技术领域进行深入的科研分析，包括：

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- 建筑工艺和结构力学
- 土木工程
  - 地质工程学
  - 水资源
- 建筑咨询
- 电气工程和半导体
- 工程管理
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- 健康科学
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  - 流行病学、生物统计和计算生物学
  - 暴露评估和辐射剂量重建
  - 公共健康和工业卫生
  - 毒理学和机制生物学
- 人类行为科学
- 材料科学
- 机械工程和航空工程
- 统计和数据科学
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- 热能科学
- 车辆工程
- 视频通讯

## Staff & Locations

## 专业员工及分公司

We pride ourselves on the high quality of our staff of approximately 900 employees, of which more than 650 are degreed technical professionals, with over 350 holding a doctorate in their field of specialization. Exponent is publicly traded on the United States NASDAQ exchange under the symbol "EXPO." Exponent is certified to ISO 9001 and is authorized by the United States General Services Administration (GSA) to provide professional engineering services.

我们十分自豪拥有一支超过900名高素质员工的队伍。其中650多名员工拥有技术专业学位，获得博士学位者超过350名。毅博在美国纳斯达克公开上市，公司代号为“EXPO”。毅博通过了ISO9001质量体系认证，并获美国总务管理局(GSA)授权提供专业的工程服务。

### Office Locations:

Hangzhou (China)

Boston(2), Chicago (2), Denver, Detroit, Houston, Los Angeles, Miami, New York, Oakland, Orange County, Philadelphia, Phoenix, Seattle, Silicon Valley, and Washington D.C. (3)(United States)

Harrogate and Derby (United Kingdom)

Düsseldorf (Germany)

Zürich (Switzerland)

### 各地分公司

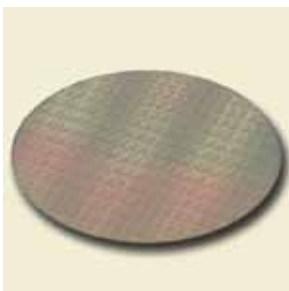
杭州(中国)

波士顿 (2), 芝加哥 (2), 丹佛, 底特律, 休斯敦, 洛杉矶, 迈阿密, 纽约, 奥克兰, 橙县, 费城, 凤凰城, 西雅图, 硅谷和华盛顿 (3)(美国)

哈罗门市和达拜市(英国)

杜塞尔多夫(德国)

苏黎世(瑞士)



Exponent Science and Technology Consulting Co., Ltd. (Hangzhou), also known as Exponent China, is located in the Hangzhou Hi-Tech Development Zone, and provides engineering and scientific consulting services to meet the increasing demand for technical support to international companies operating in East Asia as well as Chinese Government and larger domestic companies.

Exponent China, and the corporation's other 23 offices have direct access to the entire wealth of competence and experience of the parent company, Exponent, Inc. to produce solutions to our clients' complex engineering, scientific, and technical problems. In China, the firm specializes in design review, factory auditing failure analysis and investigation, intellectual property technical and litigation support, product safety, recall support, technical and regulatory support for foods and chemicals, technology due diligence, local problem solving and vendor selection support.

### Exponent China

- One of China's first organized Professional Engineering Services firms.
- Managed by internationally educated and experienced staff who adhere to Exponent's culture of client confidentiality, intellectual property protection, and technical excellence.
- Staffed by Exponent engineers of the high technical caliber that clients have come to expect.
- Staff is bilingual in Mandarin Chinese and English, has extensive experience working with international clients, and has in-depth knowledge of the local Asian culture.
- Chinese office staff holds engineering graduate degrees from the top universities worldwide (University of California, Cambridge University, Northwestern University, Royal Melbourne Institute of Technology, etc.) and has solid experience in the areas of project management, failure analysis and investigations, mechanical and electrical engineering, product safety and quality evaluations, and factory audits.

毅博科技咨询（杭州）有限公司，即毅博中国，座落于杭州高新技术开发区，主要提供工程和科技咨询服务，以满足在东亚地区运作的美国和国际公司，中国政府以及大型中国公司日益增长的技术支持需要。

毅博中国和其它23个分公司，能直接使用母公司 Exponent Inc. 全套丰富的能力和经验，为客户的高难度工程、科学和技术问题提供解决方案。在中国，公司着重致力于设计评估、工厂审核、故障分析调查、知识产权技术和诉讼支持、产品安全、产品召回支持、食品和化学品的技术及法律援助、技术尽职调查、当地问题解决，以及供应商甄选支持等领域。

### 毅博中国

- 是中国最早的致力于提供专业工程服务的公司之一。
- 由在国外受过高等教育并拥有丰富经验的人员负责管理，他们恪守毅博的原则：保守客户秘密，保护知识产权，保持技术优势。
- 技术人员具备客户所期待的高水准技术能力。
- 员工通晓中英文，在与国际客户协作方面具有丰富的经验，并且对亚洲本土文化有深厚的理解。
- 中国公司员工持有世界著名大学（美国加州大学，英国剑桥大学，美国西北大学，澳大利亚墨尔本皇家理工大学等）的工程专业博士学位，在项目管理、失效分析和调查、机械工程、电气工程、产品安全评估和工厂审核等领域具有丰富的经验。

# Key Areas of Support 主要技术支持领域

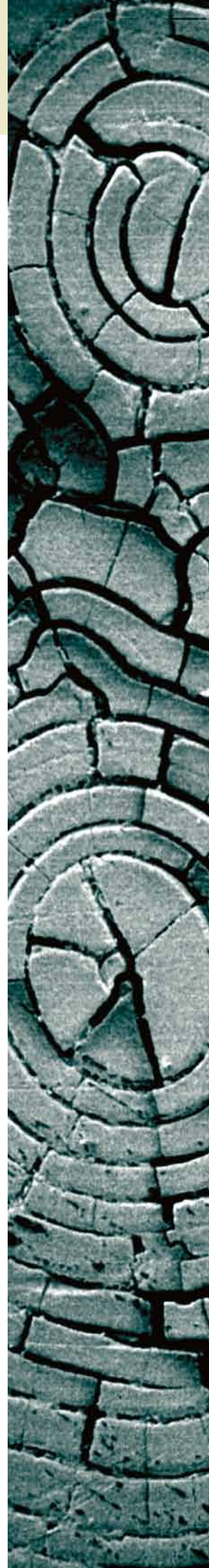
Exponent China provides high quality consulting support to international clients with operations or vendors in China and serves local clients within China who want to improve their operations to meet international standards or issue safer and higher quality products.

毅博中国为在中国运营或有中国供应商的国际客户提供高水准的咨询服务，也为力图提高经营水平以达到国际标准或为生产更安全和高质量产品的中国本土公司服务。

## Key Areas of Support include:

## 主要服务范围包括:

- Battery Services
  - Design Review
  - Factory Audits
  - Failure Analysis and Investigation
  - Intellectual Property/Litigation/Insurance Claim Support
  - Product Safety Consulting
  - Regulation and Technical Support – Chemicals
  - Regulation and Technical Support – Food Safety and Nutrition
- 电池产品咨询服务
  - 设计评估
  - 工厂审核
  - 失效分析
  - 知识产权/诉讼/保险理赔支持
  - 产品安全咨询
  - 化学品法规和技术支持
  - 食品安全及营养学法规和技术支持



# Key Areas of Support 主要技术支持领域

## Battery Services

- Customized Testing for Specific Safety Concerns
- Battery Product Recall Support
- Process and Quality Auditing of Battery and Pack Manufacturers
- Battery Pack Incident Investigation
- Customized System Level Safety Evaluation
- System Level Electrical Failure Analysis
- Environmental Stress and Reliability Testing
- Electrochemical and Materials Testing
- CTIA Certification

## 电池产品咨询服务

- 为特殊安全考虑所定制的测试
- 电池产品召回支持
- 电池和电池组的生产过程及质量审核
- 电池组事故调查
- 电源系统安全评估
- 系统级电气失效分析与咨询
- 环境应力和可靠性测试
- 电化学和材料测试
- CTIA认证

## Design Review

### Utilize background in failure analysis to perform design reviews

- Review the mechanical and electronic designs
- Theoretical modeling using Finite Element Analysis
- Identify weak points in designs
- Identify possible failure modes
- Suggest improvements/modifications to minimize the risk for field failures

## 设计评估

### 利用毅博公司在失效分析领域的知识和经验对产品的设计进行评估

- 评估机械和电子设计
- 利用有限元分析方法进行理论模拟
- 识别设计中的缺陷
- 识别潜在失效模式
- 提出改进和修改方案以降低失效风险

## Factory Audits

### The goals of such audits include:

- Improve safety
- Improve reliability
- Optimize processes
- Minimize reject rates and associated costs

## 工厂审核

### 工厂审核的目标包括:

- 提高产品安全性
- 提高产品可靠性
- 优化流程
- 降低产品不良率以及相关成本



# Key Areas of Support 主要技术支持领域

## Factory audits include engineering audits, vendor evaluation, manufacturing line FA, improving yields and efficiency.

- Incoming materials handling, storage
- General site cleanliness
- Incoming quality control (IQC)
- Process evaluation
- Equipment operation
- Workmanship
- QC and testing
- Statistical process control (SPC)
- FA and corrective actions
- Reliability and safety testing
- Contamination issues (including RoHS)

工厂审核包括工程审核、供应商评估、产线失效分析、改进产率 and 生产效率:

- 原材料存储和处理
- 工厂整体整洁度
- 入货检验
- 过程评价
- 设备操作使用情况
- 工艺
- 质量管控和测试
- 统计过程控制
- 失效分析和纠正措施
- 可靠性和安全性测试
- 污染物问题 (含RoHS)

## Failure Analysis and Investigation

### Consumer electronics

- Computers
- Notebooks
- PDAs
- Cell phones
- Portable DVD players
- Electric toothbrushes
- Home appliances

## 失效分析

### 消费电子产品

- 计算机
- 笔记本电脑
- 掌上电脑
- 手机
- 便携式DVD播放器
- 电动牙刷
- 家用电器等

### Electrical components

- PCBA
- Touch screens
- Glass screens
- Batteries and associated circuitry
- Capacitors

### 电子元器件

- 印刷电路板上板
- 触摸屏
- 玻璃显示屏
- 电池及附属电路
- 电容器等



# Key Areas of Support 主要技术支持领域

## Consumer products

- Plastic, metal, glass, ceramic, composites
- Toys, tools, household devices, personal hygiene, pet-care products

## 消费类产品

- 塑料、金属、玻璃、陶瓷、复合材料等
- 玩具等、工具、家用产品、个人卫生、宠物护理产品

## Heavy Equipment

- Forklifts
- Cranes
- Elevators
- Pressure vessels
- Composite structures

## 重型设备

- 叉车
- 起重机
- 电梯
- 压力容器
- 复合材料结构

## Components

- Fasteners
- Seals
- Adhesives, hinges, joints, etc.

## 零部件

- 紧固件
- 密封件
- 粘结剂、铰链、连接件等

## Metallurgy

- Fracture
- Fatigue
- Overload
- Creep
- Hardness
- Stress corrosion cracking
- Hydrogen embrittlement
- Corrosion

## 冶金金相分析

- 断裂
- 疲劳
- 过载
- 蠕变
- 硬度分析
- 应力腐蚀断裂
- 氢脆
- 腐蚀

## Intellectual Property/Litigation/Insurance Claim Support

- Technology and manufacturing assessments
- Patent reviews
- Fire cause and origin investigations
- Property and product damage assessments
- Technology due diligence reviews

## 知识产权/诉讼/保险理赔技术服务

- 技术和制造评估
- 专利审查
- 火灾源由调查
- 知识产权和产品损失评估
- 技术尽职审查



# Key Areas of Support 主要技术支持领域

## Product Safety Consulting 产品安全咨询

- Design reviews for consumer safety
- RoHS compliance and heavy metal detection
- Design and conduct customized product testing to address safety concerns
- UL certification support

## 产品安全咨询

- 针对消费者安全进行设计评估
- RoHS 符合性和重金属检测
- 设计和执行专门设计的产品测试以解决安全性问题
- UL认证咨询

## Regulation and Technical Support 管理法规和技术支持

### Chemicals 化学品

- Registration, Evaluation, Authorization of Chemicals (REACH)
- Efficacy & Biological Assessment Dossiers and Dossier Submissions
- Chemical and Agricultural Product Regulation Support - International
- Import Tolerances (IT) and Maximum Residual Levels (MRL)
- Trademark Registration
- Chemical Regulatory Support – Federal and State
- Technical and Regulatory Services for Product R&D, Compliance Audit and Technology Due Diligence

### 化学品管理法规和技术支持

- 欧盟化学品注册、评估及授权法规 (REACH)
- 功效及生物学评估材料准备和提交
- 化学品、农产品注册和国际市场准入的法规服务
- 针对农产品进口残留允许量和最高残留限量标准的技术、法规服务
- 商标注册
- 美国境内联邦及各州化学品管理的法规服务
- 为产品开发、合规性审核及技术尽职调查提供技术和法规服务

### Food Safety & Nutrition 食品安全及营养学

- Codex Alimentarius
- Due Diligence
- Food Ingredients, Products and Beverages Recall
- Food Safety and Nutrition
- GRAS Determinations and Notifications
- Microbiological and Chemical Evaluations
- Outbreak Investigation Review
- Regulatory Affairs Compliance and Regulatory Support

### 食品安全及营养学法规和技术支持

- 国际食品法典委员会的相关事务
- 尽职调查
- 食品原料、产品及饮料召回
- 食品安全及营养学评估
- “一般认为安全”添加剂确认及通报
- 食品微生物学和化学评价
- 突发食品安全事件调查和评估
- 食品合规性审核及法规支持服务



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## **Associations**

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The Aspirin Foundation of America  
Truck Trailer Manufacturers Association

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U.S. Department of Defense  
U.S. Department of Transportation  
U.S. Department of Justice

## **And Numerous Law Firms and Insurance Carriers**

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美国石油学会  
美国土木工程师学会  
美国铁路协会  
化工产业协会  
美国植保协会  
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国家矿业协会  
美国汽车工程师学会  
美国阿司匹林基金会  
美国卡车拖车制造商协会

## **政府机关**

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美国能源部  
美国国防部  
美国交通运输部  
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以及其他多家法律事务所  
及保险公司



A leading engineering & scientific consulting firm dedicated to helping our clients solve their technical problems.

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