

## **ESD Training Invitation**

### **防静电培训邀请**

Armeka Engineering Ltd is a Finnish company specializing in ESD (electrostatic discharge) protection. The company has been offering ESD products and services for over twenty years, and developed into one of the most expert companies on the field on a global scale. Mr. Ari Korpipää will host this 2 days training. Mr. Korpipää has been on the ESD industry for over 20 years. During that time he has had thousands of ESD-trainings around the world, while the number of his trainees has exceeded 100 000.

阿美卡公司是一家专业从事静电防护的芬兰公司。公司提供防静电产品及专业服务已经有20余年，并逐步发展成为全球范围内防静电领域最专业的供应商之一。阿尔卡尔皮帕先生是欧洲最专业的防静电课程培训专家之一，也是阿美卡公司顶尖级别的专家。阿尔卡尔皮帕先生从事防静电研发及实践已有20余年，在全球范围内培训过的人员已超过100000人。本次为期2天的防静电培训将由阿尔卡尔皮帕先生亲自主持。

### **Target of ESD Expert Training:**

培训的目标:

**Saving money and making better product quality!**  
为企业节省成本、提高产品质量!

The target of ESD-Expert Training is to provide basic skills to make, and understand ESD-Audit according to ESD-requirements, and international ESD standards.

本次专业级培训的目标是根据国际防静电标准以及企业防静电需求，让参与者掌握并理解防静电审计工作的详细内容，并能够独立完成内部审计。

The first day consists of the basic theory of ESD including a great number of various demonstrations to help to understand the ESD better in practice.

第一天课程内容包括防静电的基础理论知识以及各种实验演示，从而让参与者在实践中更好的理解防静电概念。

On the second day, we concentrate on practical ESD requirements and the participants will have many chances to practice ESD-measurements by themselves.

第二天课程重在实践。参与者将有很多机会亲自参与防静电测量及审计工作。

### **To whom:**

课程针对谁?

ESD training shall be provided to personnel who specify, procedure, design, mark or handle ESDS in any way or are likely to do so, including those who manage and supervise them. Special emphasis shall be placed on training of personnel who are to undertake field work

本次防静电培训针对企业生产过程中以任何方式接触、设计、处理静电敏感元件的员工及管理人员，包括管理层及监督人员。特别是那些在生产车间内实际操作的相关人员。

## ESD Expert Training Agenda

防静电培训课程安排

### DAY 1

第一天

#### · What is ESD?

什么是防静电？

#### o Generating static electricity

静电的产生

#### o Why is electrostatic discharge so harmful for electronic components

为什么静电释放对电子元件有害？

#### o Why ESD protection is so important for companies

为什么静电防护在生产过程中如此重要？

#### o How ESD protection can save money and improve quality

静电防护如何能够给企业节省成本，提高产品质量？

#### o Demonstrations

实践演示

#### · ESD Effects

静电带来的影响

#### o On persons

静电对人体的影响

#### o On components

静电对元器件的影响

#### o On printed circuit and devices

静电对印刷电路板及设备的影响

#### o Demonstrations

实践演示

#### · Protecting of ESD-packaging materials

防静电包装材料

#### o Demands of purchase on suppliers

对于原料供应商的要求

#### o Handling of components and PCB:s

操作电路板及电子原件的要求

#### · Demands on ESD protected working environments

防静电工作环境的要求

#### o Floor surface, table top, shelf materials etc.

表面物体（包括：地面、桌面、物料架）

#### o Protecting principles

防护原则

#### o Wrist band, shoes, chairs, clothes etc. materials in EPA

静电防护区域中的设施（手腕带、防静电鞋、防静电座椅、服装等）

#### o Some basic ESD measurements



## 实践演示基础防静电测量

### DAY 2

#### 第二天

- **Practical ESD-Requirements step by step and learning how to make ESD-Audit**  
逐步讲解静电防护的要求以及如何如何进行防静电审计

- o Participants practice making ESD-measurements  
参与者要亲自进行防静电测量
- o Analyzing measurement results  
分析测量结果

- **ESD-measurements for materials which are used in EPA are:**  
防静电区域中物料的测量

- o Sprays  
托盘
- o Soldering irons, microscopes, tools  
电烙铁、显微镜、工具等
- o Monitors, keypads and mouse  
显示器、键盘、鼠标等
- o Packing materials  
包装材料
- o Other materials  
其他材料

- **Practical measurements of floor and table surfaces**  
实际测量防静电地面及桌面

- o Measurements of an alternating voltage in working surfaces  
测量工作表面的静电电压变化
- o Resistances in ESD-groundings  
防静电接地电阻的测量

