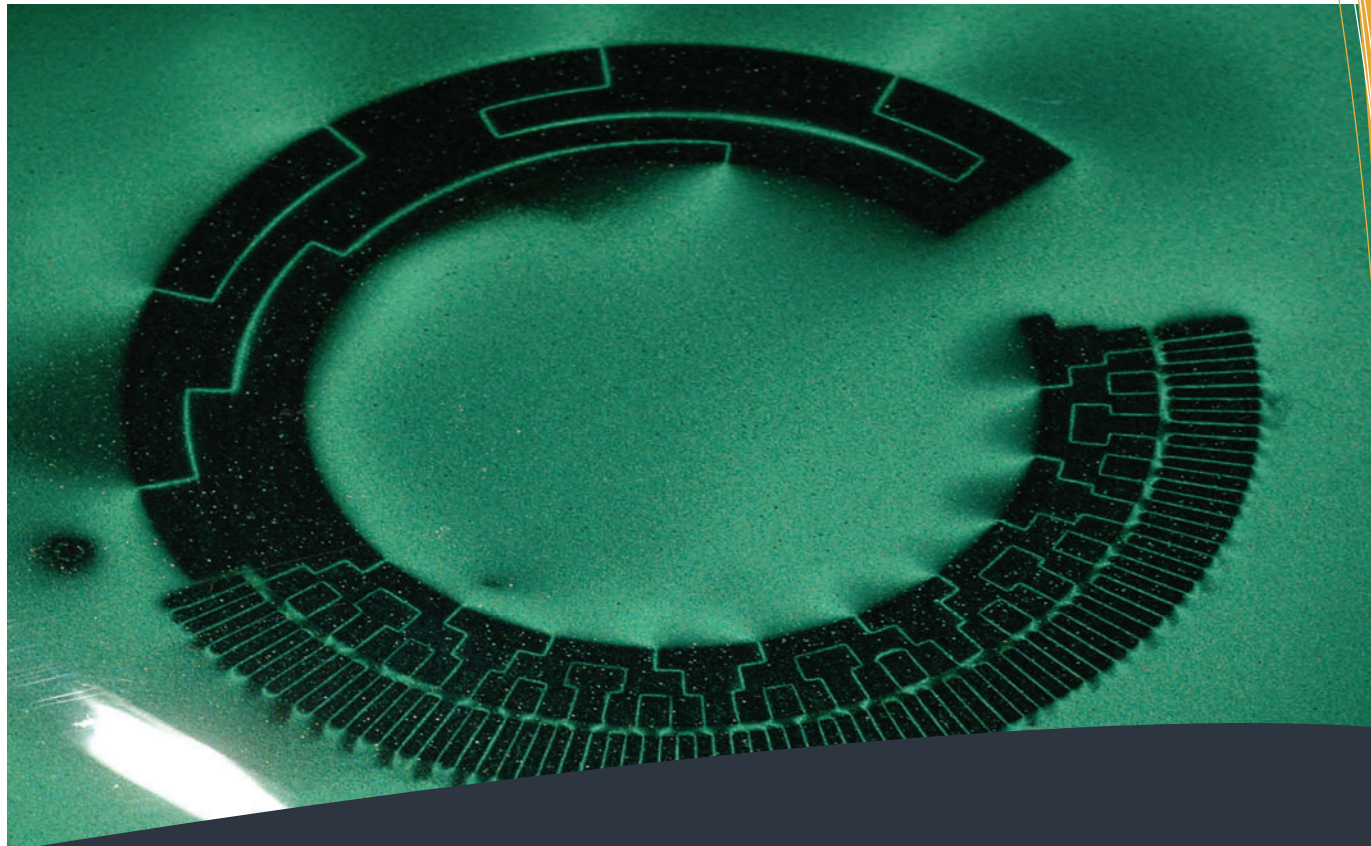




**MAGNETIC MATERIALS  
MAGNETIZING AND TESTING  
CONTACTLESS SENSORS**



*Feb. 01, 2010 Troy MI.*

**Michigan State University  
Management Education Center**

**Magnetics Workshop Specifically Tailored  
for Professionals in the Automotive &  
Alternative Energy Industries**

**Presented by:**

**Alliance LLC  
Magsys Magnet Systems  
Austriamicrosystems USA Inc**

NOT FOR  
PROFIT EVENT

**\$120.00  
PER PERSON**

**OR \$500.00  
PER COMPANY  
OF 5 INDIVIDUALS**

# Workshop Overview



This is a one day workshop tailored to bring an understanding of design, pricing and selection criteria for magnetic materials, equipment used for magnetizing and testing, and the design and application of magnetic sensors.

The workshop is formatted specifically for professionals in the Automotive and Alternative Energy industries.

Presentations will include theory, practical design, application examples and market information.



# Magnetic Materials

## PROPERTIES AND TERMINOLOGY

- HYSTERESIS LOOP
- REMANENCE, COERCIVITY & ENERGY PRODUCT
- TEMPERATURE CHARACTERISTICS
- CHEMICAL AND PHYSICAL PROPERTIES

## SELECTION CRITERIA

- INDIVIDUAL MAGNET CHARACTERISTICS
- AVAILABILITY AND PRICING ISSUES
- GLOBAL TRENDS AND SUPPLIER ISSUES

## DESIGN CONSIDERATIONS

- APPLICATION AND ENVIRONMENTAL LIMITS
- REQUIRED SPECIFICATIONS ON DRAWINGS
- INFLUENCE OF FURTHER PROCESSING

# Magnetizing & Testing

## MAGNETIZING EQUIPMENT

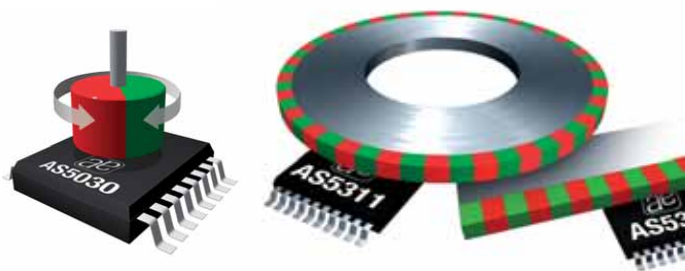
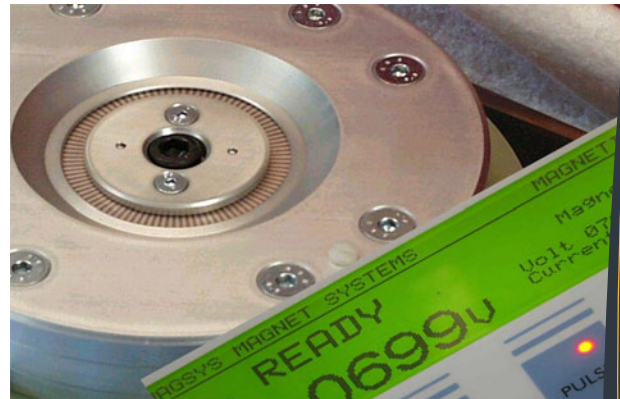
- MAGNETIZING CONFIGURATIONS
- TYPES OF MAGNETIZERS AND SUITABILITY
- DEMAGNETIZING AND CYCLING
- ELECTRONICS AND PROCESSING

## MAGNETIZING FIXTURES

- TYPES AND PROCESSING REQUIREMENTS
- COOLING AND LIFE EXPECTANCY

## TESTING EQUIPMENT

- REQUIREMENTS FOR MAGNET PROPERTIES
- TYPES OF INSTRUMENTS
- INTEGRATION INTO OTHER EQUIPMENT



# Magnetic Sensors

## CONTACTLESS TECHNOLOGY

- ROTARY AND LINEAR MOTION DETECTION CIRCUITS
- ON-AXIS AND OFF-AXIS ROTATION ANGLE MEASUREMENT
- LINEAR POSITION MEASUREMENTS
- RELIABILITY AND ACCURACY

## CHOOSING THE CORRECT SENSOR

- INTEGRATED HALL EFFECT IC
- ANGLE AND POSITION SENSORS

## SPECIALIZED DESIGN TECHNIQUES

- EXTENDING VERTICAL RANGE
- ANGLE ERRORS AND MISALIGNMENT
- FIELD NON-LINEARITY AND MAGNETIC OFFSET

# Schedule:

- **9:00 AM** START OF WORKSHOP WITH BRIEF INTRODUCTION TO PARTICIPANTS, *SNACKS AND BEVERAGES SERVED*
- **9:30 AM** 2 HOUR PRESENTATION ON MAGNETIC MATERIALS, *15 MINUTE Q&A SESSION*
- **11:30 AM** BREAK FOR BUFFET LUNCH IN DINING ROOM
- **12:30 PM** 2 HOUR PRESENTATION ON MAGNETIZING & TESTING EQUIPMENT, *15 MINUTE Q&A SESSION AND BREAK*
- **2:40 PM** 2 HOUR PRESENTATION ON MAGNETIC SENSORS, *15 MINUTE Q&A SESSION. CONFERENCE ENDS AT 5 PM*



# Magnetics Workshop for the Automotive & Alternative Energy Industry

Single day and locally held workshop presented by:



Alliance LLC is an industry leader for permanent magnets and assemblies. The company is headquartered in Valparaiso Indiana and has several technical and warehouse facilities located throughout the US and Mexico. Alliance LLC is listed in Forbes Inc. 500 as one of the fastest growing private business in America. Our company's ability to solve complex problems and provide cost effective solutions for customers is the greatest contributor for this achievement.

The company MAGSYS Magnet Systeme GmbH stands for tailor-made, sophisticated products and system solutions pertaining to the utilization of permanent magnets. Since 1997, the company been valued by its customers throughout the world as a flexible and innovative partner for efficient and comprehensive solutions to challenges dealing with permanent magnets. These solutions include magnetizing systems and devices for permanent magnets, not only for manufacturers, but also for end-users.



Austriamicrosystems is a global leader in the design and manufacturing of high performance analog ICs. With a full service foundry, over 27 years of experience and over 1,000 employees worldwide, we bring innovative solutions for power management, automotive safety systems, industrial sensor interfaces and a for wide range of other applications. We offer the industry's broadest range of high performance absolute and incremental rotary and linear magnetic encoder ICs.

For additional information and any questions regarding this workshop, please contact any of the following:

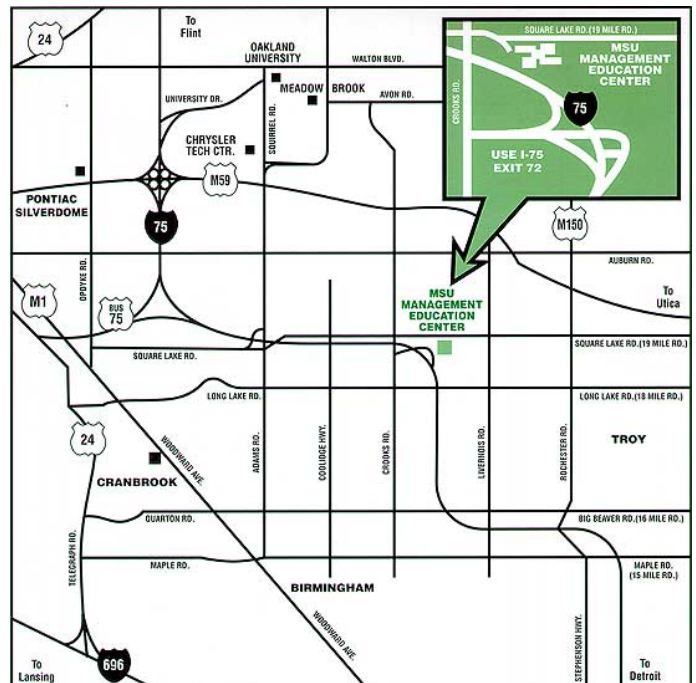
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## Directions

Management Education Center  
811 West Square Lake Rd, Troy, MI.  
Phone 248-879-2456



*DURING THE WORKSHOP, AND AT ALL TIMES, WE WILL HAVE FREE WI-FI, REFRESHMENTS, COFFEE AND SNACKS FOR THE ATTENDEES. EXECUTIVE LEATHER CHAIR SEATING AND OTHER AMENITIES.*