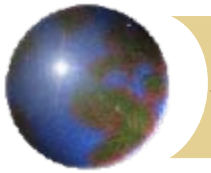


# VAMAS

## 25 YEARS AND COUNTING

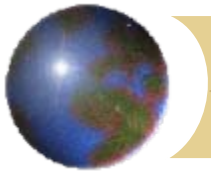
**Eric J. Amis, Chair**  
**Steve Freiman, Secretary**  
[steve.freiman@nist.gov](mailto:steve.freiman@nist.gov)

**VAMAS.org**



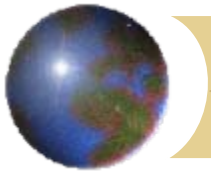
# What is VAMAS?

- **Formed as one of 18 cooperative projects at the 1982 Economic Summit to stimulate trade in new technologies using advanced materials, through pre-standards research**
- **Current Members: Canada, France, Germany, Italy, Japan, Korea, UK, USA, and the EC**
- **Researchers from VAMAS and non-VAMAS member countries**



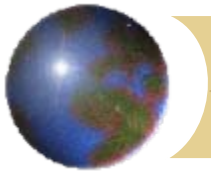
## VAMAS Mission

**To support world trade in products dependent on advanced materials technologies by providing the technical basis for harmonized measurements, testing, specifications, and standards.**



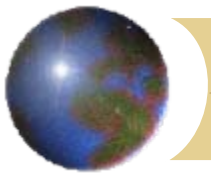
## *VAMAS Accomplishments*

- **Work has led to 85 national, regional or international standards**
- **~ 30 VAMAS reports**
- **Five Technology Trends Assessments**
- **~ 600 publications resulting from VAMAS work**



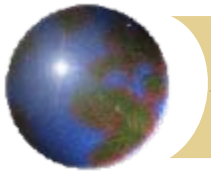
## *MOUs with Other Organizations*

- **ISO - 1993**
- **IEC – 1995**
- **IEA – 2002**
- **CIPM - 2008**
- **Discussions underway with WMRIF**



# VAMAS Technical Working Areas

- **Surface Chemical Analysis**
- **Ceramics for Structural Applications**
- **Polymer Composites**
- **Measurement of Residual Stress**
- **Tissue Engineering**
- **Nanomechanics Applied to SPM**
- **Measurements for Weldments**
- **Modulus Measurements**
- **Superconducting Materials**
- **Mechanical Measurements of Thin Films and Coatings**
- **Performance Properties for Electroceramics**
- **Cryogenic Structural Materials**
- **Full Field Optical Stress and Strain Measurement**
- **Quantitative Mass Spectroscopy of Synthetic Polymers**
- **Polymer Nanocomposites**

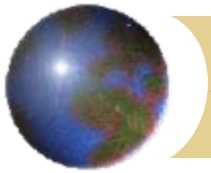


## New VAMAS MOU Signed

- **New Memorandum of Understanding allows for the expansion of VAMAS beyond the original membership.**

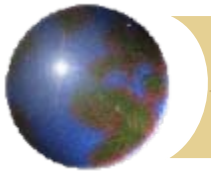
- Korea is the newest VAMAS member.

- Brazil, South Africa, India, Australia, Mexico have expressed interest



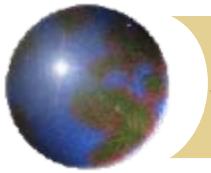
# New Efforts in Nanotechnology

- **TWA 29: Nanomechanics Applied to SPM**
  - **Co-leadership by NPL (David Mendels and NIST (Richard Gates)**
  - **Developing methods for accurately measuring the spring constant for SPM.**
  - **Standard Reference Springs to be available**



# New Efforts in Nanotechnology

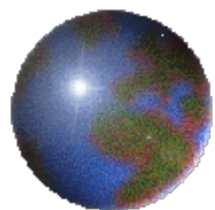
- **TWA 33: Polymer Nanocomposites (New)**  
Led by Industrial Materials Institute, Canada (Les Utracki)
- **Two projects begun:**
  - 1. Determination of the shape, size and size distribution of nano-filler particles
  - 2. Determination of the dielectric characteristics of polymer nanocomposites



# New Efforts in Nanotechnology

## ● Proposed New TWA's

- Airborne Nano-particles (LNE, France)
- Multiwall Carbon Nanotubes (NIMS, Japan)
- Nano-EHS (NIST, US)



## **Example of Success: TWA 2**

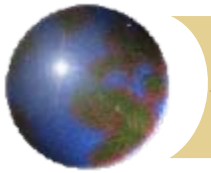
### **25 Years of Shared Leadership: NIST and NPL**

**19 ISO Standards; 2 ASTM Standards**

**Improved Reference Data**

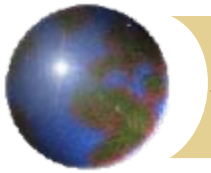
**Improved Reference Materials, including two certified reference materials.**

**Improved algorithms and software**



## *Why VAMAS has been successful*

- **Common goal of measurement development**
- **Collegial atmosphere**
- **Dedicated participants and leaders**
- **Support by leadership in NMIs**



## *The Future of VAMAS*

- **New members, beginning with Korea**
- **Interest in joining expressed by others, e.g. China, India, Australia, Brazil, Mexico, South Africa**
- **New technology, e.g., nanomaterials, tissue engineering**