



SCOPE

Discuss the role of metrology, sensors and smart measurements in advanced manufacturing. Challenges and opportunities of the NIMs to support their manufacturing base in the 4th industrial revolution

JUNE 18 - 19/2019 CHALLENGES IN METROLOGY FOR ADVANCED MANUFACTURING AND THE 4TH INDUSTRIAL REVOLUTION



VENUE

CENAM facilities

Carretera a Los Cúes km
4.5

El Marqués, Querétaro
México

C.P. 76246

www.cenam.mx

Attendees	Representatives of NMIs of the SIM Community, mainly those whose countries have manufacturing capabilities that want to be developed.
Financial support	<ul style="list-style-type: none"> • 1 person/NMI supported with option to 2 persons if supported by their own. • Each NMI invited could propose one participant; if an NMI wants to send more, this would be at their own expenses. • 12 participants with 3 hotel nights and per diem for 3 days. • 12 possibilities of support for plane tickets.
General Schedule	<p>2 Days. Tuesday 18th – Wednesday 19th. June 2019.</p> <p>Four Blocks:</p> <div style="display: flex; flex-wrap: wrap; justify-content: space-around;"> <div style="width: 45%; padding: 10px; border: 1px solid #008080; border-radius: 15px; background-color: #006699; color: white; text-align: center;"> <p>1. General context:</p> <p>Challenges in metrology for advanced manufacturing.</p> </div> <div style="width: 45%; padding: 10px; border: 1px solid #008080; border-radius: 15px; background-color: #006699; color: white; text-align: center;"> <p>2. Industrial sectors:</p> <p>Challenges in different application fields</p> </div> <div style="width: 45%; padding: 10px; border: 1px solid #008080; border-radius: 15px; background-color: #006699; color: white; text-align: center;"> <p>3. Specific metrological disciplines:</p> <p>Measurement technologies with special relevance for advanced manufacturing.</p> </div> <div style="width: 45%; padding: 10px; border: 1px solid #008080; border-radius: 15px; background-color: #006699; color: white; text-align: center;"> <p>4. Additional fields and disciplines:</p> <p>Metrological applications, IoT, AI, Innovation Technology</p> </div> </div>

Day 1 - General challenges for Metrology

Time	Theme	Speaker
09:00 – 09:30	Opening: SIM-IDB-NORAMET-Special Guests	
	Aidee Orozco, PhD - General Director of I+R&D of the Science and Tech Council of Mexico.	
	Víctor Lizardi, PhD – General Director of CENAM	
	Claire Saundry, PhD - International affairs office NIST	
	Zoltan Mester, PhD - R&D, Metrology, NRC	
Block 1	General context of challenges in metrology for Advanced Manufacturing	
09:30 – 10:00	Scientific Perspective: The revised SI and future possibilities	Richard Green, PhD Team leader of Mass and Related Quantities Group, NRC, CA
10:00 – 10:30	NMI Perspective: NIST Talk- Nanoscale measurements	James Kushmerick, PhD Dep. Director Physical Measurement Laboratory NIST, USA
10:30 – 11:00	Industrial Perspectives: Transformation in Manufacturing and challenges faced by industry	Oscar Albín, Eng. National Auto parts Industry Executive President, MX
11:00 – 11:30	Coffee Break	
11:30 – 12:00	From Automation to Industry 4.0	Flávio Arssani, PhD Siemens Digital Factory Division, BR - MX
12:00 – 12:30	NIST on a Chip Program	Barbara Goldstein, PhD National Institute of Standards and Technology, NIST, USA
12:30 – 13:30	Lunch - CENAM	All
Labs Visit 1 13:30 – 14:30	a) FTIR and Raman b) Dimensional c) Optical Properties of Materials	

Day 1 - General challenges for Metrology

Time	Theme	Speaker
Block 2	Industrial sectors: <i>Challenges in different application fields</i>	
14:30 – 15:00	Automotive Industry	Leonard Franchini, PhD Director of Eurotranciatura. IT-MX
15:00 – 15:30	Aeronautical Industry	Carla Quezada, PhD Data Science Team Leader of GEIQ Technology Center, QRO, MX.
15:30 – 16:00	Electric-Electronic	Antonio Sierra, PhD Director of Condumex. Development and Research center. MX
16:00 – 16:30	Coffee Break	
16:30 – 17:00	Mechanical metrology tools to support improvements in additive manufacturing	Richard Green, PhD Team leader of Mass and Related Quantities Group, NRC, CA
17:00 – 17:30	NRC Dimensional Metrology strategies for supporting advanced manufacturing in Canada	Brian Eves, PhD Team leader for Dimensional Metrology, NRC, CA
17:30 – 18:00	Renewable Energy - Photovoltaics	Héctor Alfonso Castillo, PhD Scientific coordinator CENAM, MX

Day 2 - Specific metrology disciplines and fields

Time	Theme	Speaker
Block 3	<i>Specific metrological disciplines: measurement technologies with special relevance for advanced manufacturing.</i>	
09:00 - 09:30	Large Scale Dimensional Metrology.	Daniel Sawyer, PhD National Institute of Standards and Technology, NIST, USA
09:30 - 10:00	Optical measurement methods	Octavio Icasio, PhD Metrologist of CENAM, MX
10:00-10:30	Additive Manufacturing technologies (polymers)	Kalman Migler, PhD National Institute of Standards and Technology, NIST, USA
10:30 – 11:00	Dynamic quantities	Akobuije Chijioke, PhD National Institute of Standards and Technology, NIST, USA
11:00 – 11:30	Coffee Break	
11:30 - 12:00	MESS group experience into Industry 4.0	Óscar Morales, Eng. General Director of MESS Metrological Services
12:00 – 12:30	Time & Frequency for 5G Telecommunication	Carlos Ortiz, PhD Scientific Coordinator CENAM, MX

Day 2 - Specific metrology disciplines and fields

Time	Theme	Speaker
12:30 – 13:30	Lunch - CENAM	All attendants
Labs Visit 2	d) Dynamic quantities	
13:30 – 14:30	e) Spectro Radiometry	
	f) Time and Frequency	
Block 4	Additional fields and disciplines: metrological applications in energy, IoT and Innovation Technology.	
14:30-15:00	Artificial intelligence	Erik Molino, PhD Associate Researcher IIMAS Mérida – UNAM
15:00 – 15:30	MESURA 4.0	Salvador Echeverría, PhD Director of Physics Metrology CENAM, MX
15:30 – 16:00	The future of mobility	Manuel Wario, Eng. Systems and Technology Manager. Continental Automotive R&D, MX
16:00 – 16:30	Coffee Break	
16:30 – 17:00	Transactive Energy	René Carranza, PhD Director of Electrical Metrology CENAM, MX
17:00 – 17:30	Challenges for the SIM Region	Víctor Lizardi, PhD -CENAM
	Closing Remarks	Claire Saundry PhD -NIST Zoltan Mester, PhD-NRC