

The Conference

 **AMPP**[™]
CHAPTER ITALY

3rd Conference & Expo 2024
Sharing knowledge, the way to go!

“An International event for the Corrosion Prevention”





AMPPTM ITALY
CHAPTER

3rd Conference & Expo 2024
Sharing knowledge, the way to go!

GENOA, ITALY
9-11 June 2024

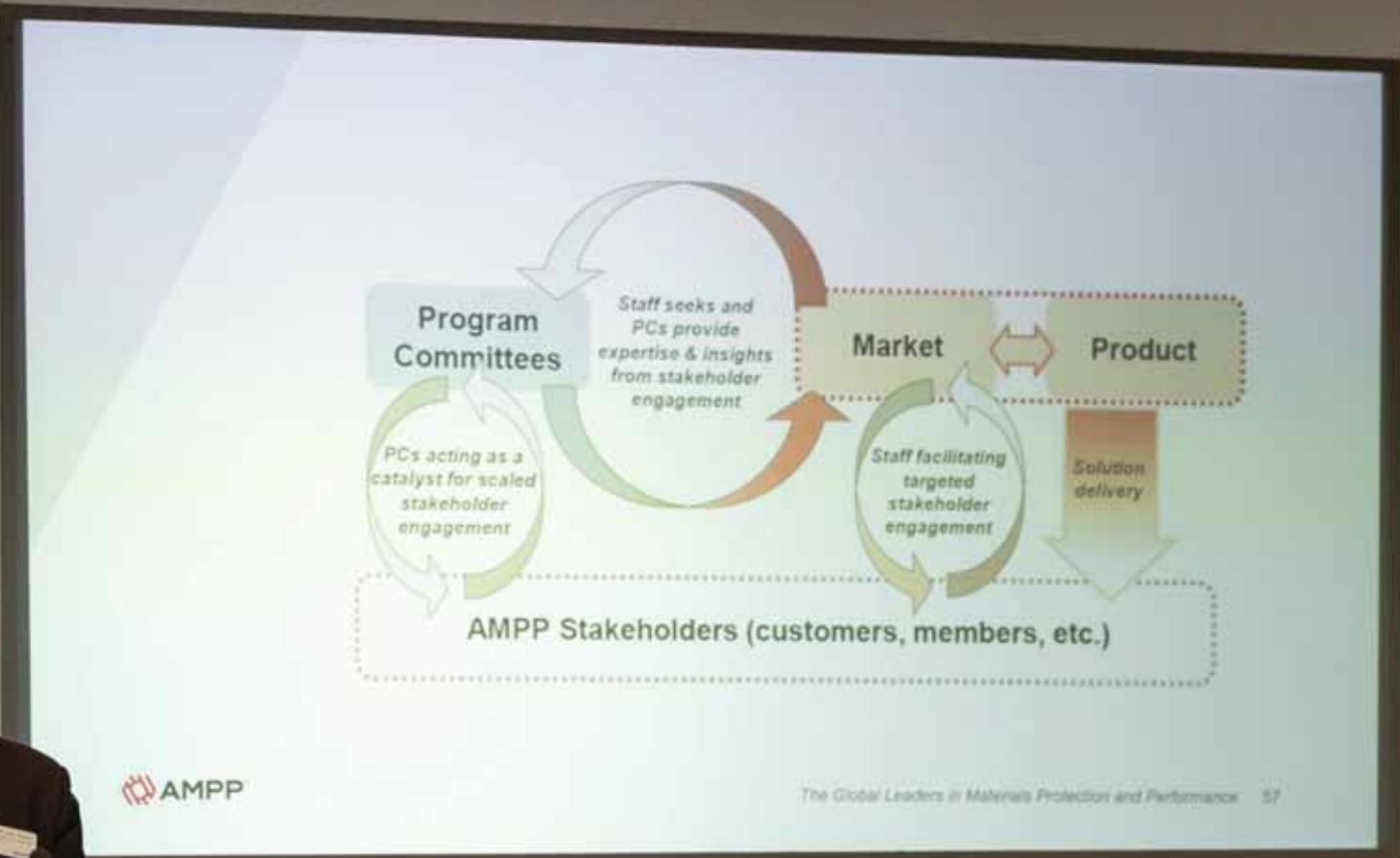




MANY THANKS



A. ELIEZER



Three Phases of the Transformation Journey



Imagine

What is AMPP's Place in the World



Transform

Response to a transformation in Supply, Demand & Context



Accelerate

Create Value
Build
Ag
Sc



Three Phases of the Transformation Journey



Imagine

What is AMPP's Place in the World



Transform

Response to a transformation in Supply & Context















AMPP
CHAPTER **ITALY**

3rd Conference & Expo 2024
Sharing knowledge, the way to go!



GENOA, ITALY
9-11 June 2024











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GENOA, ITALY
9-11 June 2024

The banner features a background image of the modern architecture of the Lingotto factory in Genoa, Italy, with its distinctive white, rib-like structure. The text is overlaid on this image in various colors and fonts.



U. MARINELLI

ANFICO

V.S.





Marinelli - Machine Learning in Corrosion Fields

LOW STEEL

SAMSUNG

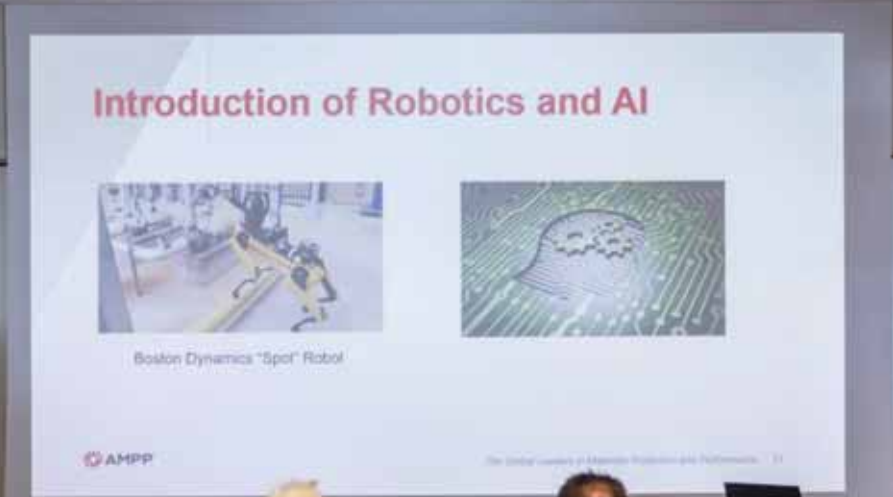














Sustainability



- Reducing Steel Production
- Extension of Service Life
- Maintenance Optimization



M. MALEFANTI

C. VIE



M. MALFANTI











Young EFC - Initiatives

Young EFC Economic Forum of Catalonia Catalan Economic Forum Economic Forum of Catalonia	EFC Economic Forum of Catalonia Catalan Economic Forum Economic Forum of Catalonia	EFC Economic Forum of Catalonia Catalan Economic Forum Economic Forum of Catalonia	EFC Economic Forum of Catalonia Catalan Economic Forum Economic Forum of Catalonia
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Charlotte Vie - BP UK

Malfanti - IMC Engineering

recording are NOT allowed in
operators authorized by Conf









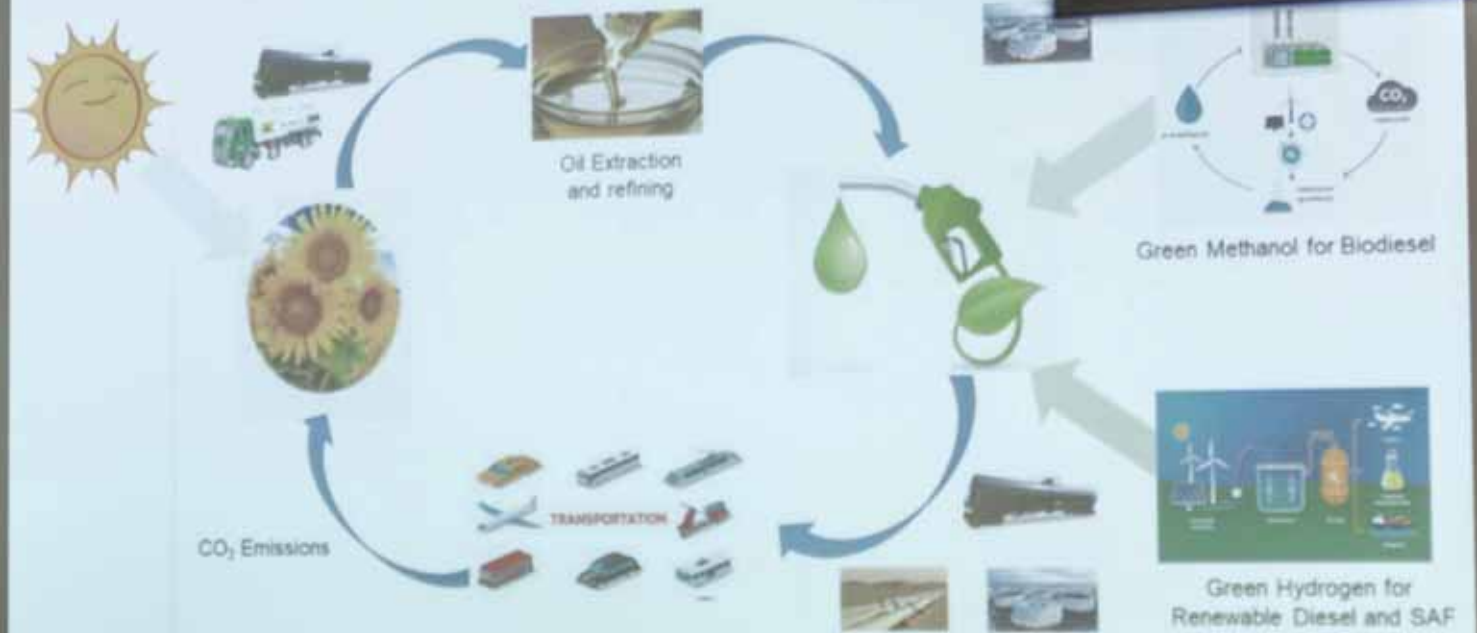


"Tank lining challenges for the switch to renewable feedstocks"

Michael Harrison	Global Product Director – Linings Sherwin-Williams
Meriah Banks	R&D Chemist – Sherwin Williams (P&M)
Lauren Egensperger	R&D Chemist – Sherwin Williams (Quality)
Eric Bidwell	R&D Chemist – Sherwin Williams (Quality)
Nilantha P Wickramaratne	Staff Chemist – Sherwin Williams (Analytical)
Ping Liu	Sr R&D Scientist – Sherwin Williams (Analytical)



Linings in the Renewable Fuel



Michael Harrison / Mariah Banks: Tank Lining challenges for the switch to Renewable Feedstocks





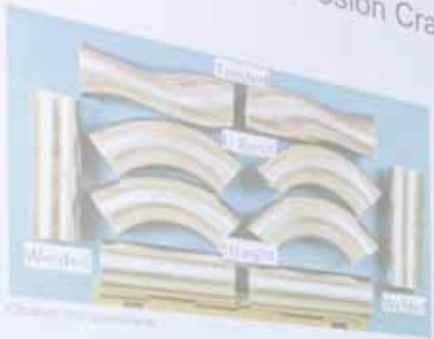








Sulfide Stress Corrosion Cracking



Results

- Exposure at 90°C (194 °F) for 30 days
- Final pH of the 90°C (194 °F) solution was 3.7
- No cracks were detected in any straight, U-bend, twisted and welded specimens.





















B. GANDOLFI



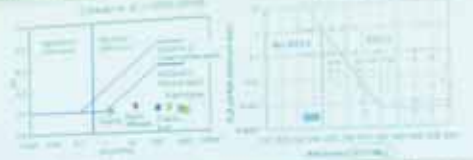
L. SMITH





Objectives 1: Surface hardness threshold (HVO.1)

For Objective 1, the intended surface hardness is a minimum of 1000 HV0.1. The maximum value of the hardness is 1500 HV0.1. The minimum value of the hardness is 500 HV0.1. The maximum value of the hardness is 1500 HV0.1. The minimum value of the hardness is 500 HV0.1.



Hardness data for various materials and treatments. The graph shows that HVO.1 treatment significantly increases surface hardness, reaching a peak of approximately 1500 HV0.1 at a distance of 10 mm for steel. The hardness then gradually decreases towards the bulk material hardness at 20 mm.



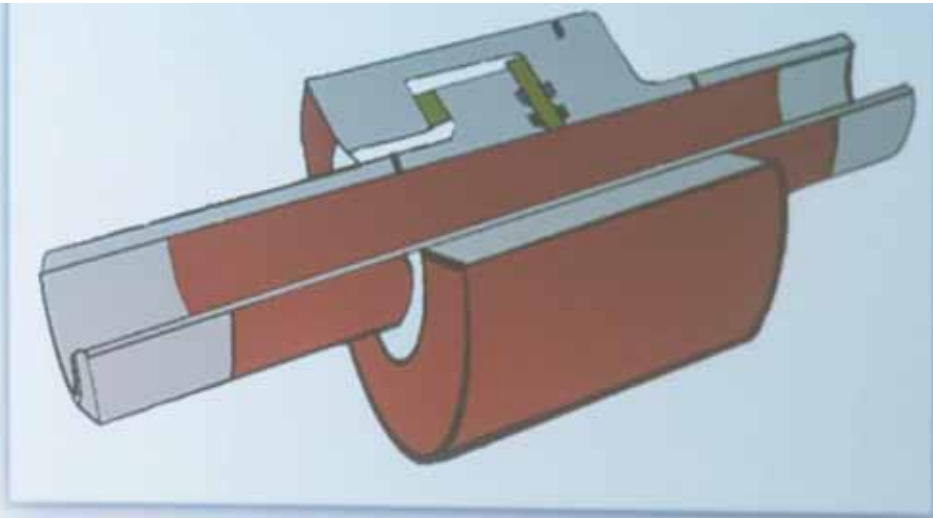
B. GANDOLFI

L. SMITH









of dielectric joints"

10



C. RUPPI



I. MAGNIFICO

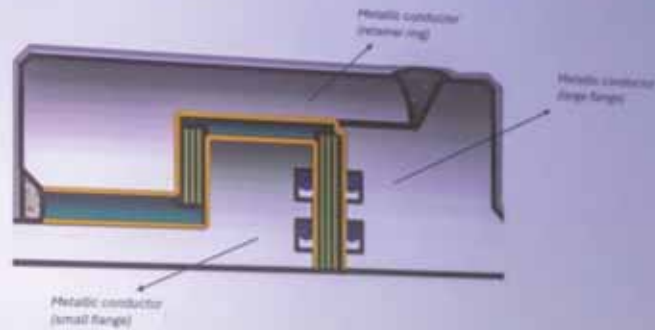


V. SAVIELLO

THE EXPERIMENTAL PROCEDURE

S is determined starting from the dimensional features of the MJU conductors (metallic parts).

Calculating the difference between the surface area of the metallic conductors, we obtain the total surface area of dielectric components (insulator + resin filler).



C. RUPPI, G. ALBICINI - "Calculation of current leakage and capacitive value of dielectric part"

















M. HALLIDAY

C. VIE



Characteristics of the pore structure: Porosity Factor and Connectivity

■ Anon, Unpublished, 2001: Structure of porous granules and soils

$PF = \frac{V_p}{V_t} = \frac{V_p}{V_s + V_p}$
 $PF = \frac{V_p}{V_s + V_p}$

- PF: Porosity Factor
- PF: Specific surface area of the pore
- PF: Specific surface area of the pore
- PF: Porosity
- PF: Connectivity (porosity, permeability, etc.)

■ J. Gross et al., 'Origin' from University, 2018: transformation to concrete

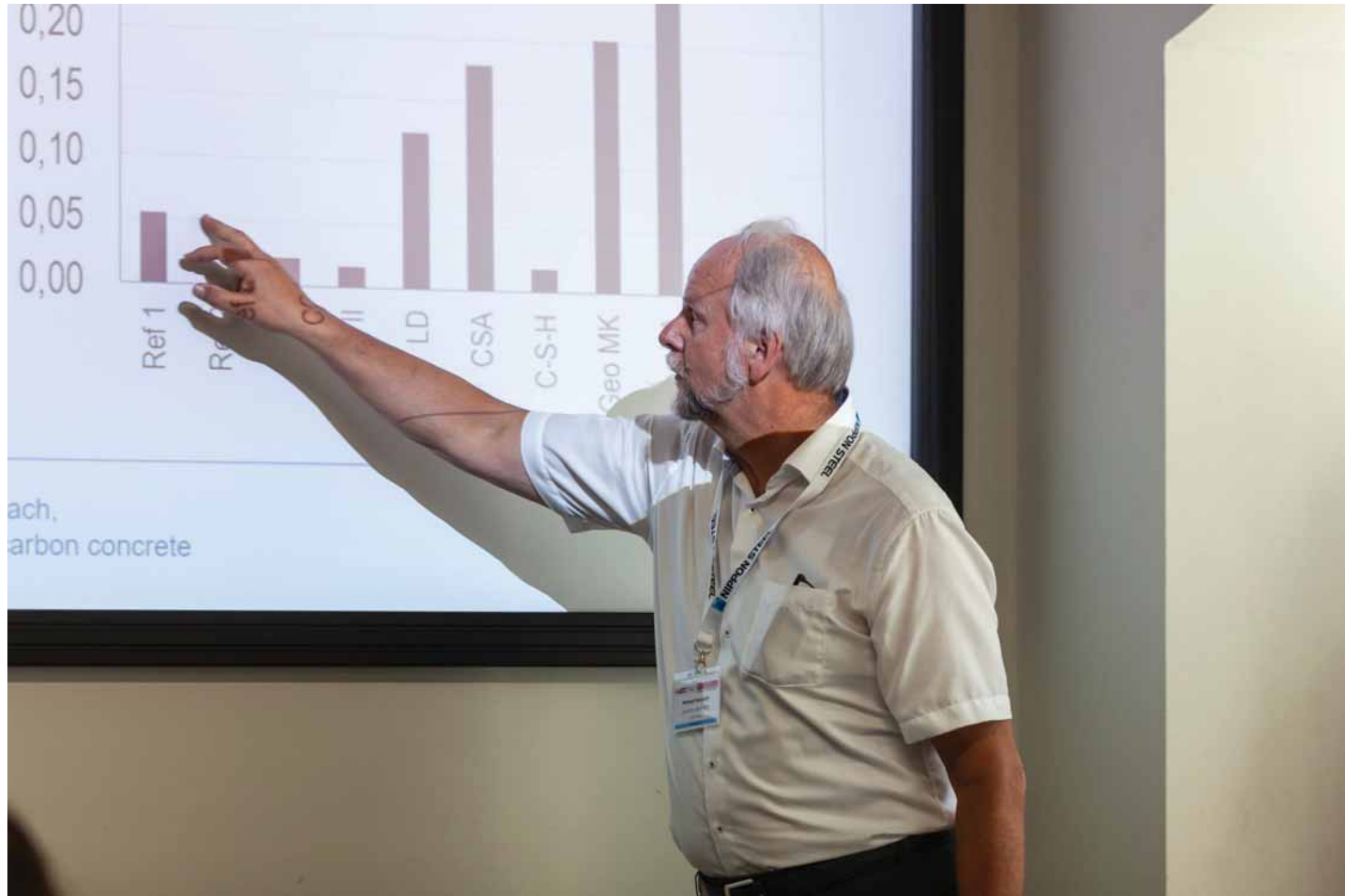
$PF = \frac{V_p}{V_t} = \frac{V_p}{V_s + V_p}$
 connectivity with $PF = \frac{V_p}{V_t}$

© 2018 NIPPON STEEL

NIPPON STEEL



ach,
carbon concrete







AMPPI ITALY 3 Conference & Expo
Sharing Knowledge, New ways to go!
Thank you for attending
Healthy Communities
@amppihealth2017















Roberto Dones, AMPP member

TESI

L. BLONFIELD

R. DONES



$$e = E_{eq} + \eta_a + \eta_c$$

R. BALLERINI

P. MARCASSOLI



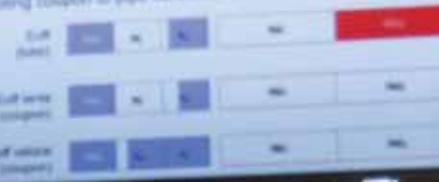
Instant-off measurement

When performing an instant Off potential measurement, ISO 15589-1 standard states that:

- a typical delay for direct measurements on the pipe is about 300 ms, to prevent influence of voltage spikes.
- in coupons, shorter delays are used.

Considering the depolarization times, become evident that:

- when measuring on pipe, the overvoltage generated by activation polarization will be always lost, as well as also some of the overvoltage generated by the concentration polarization.
- when measuring on coupon, the amount of depolarization will depend on how fast the measurement could be carried out after interrupting coupon to pipe connection.



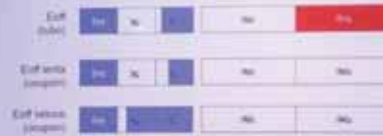
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CONFERENCE PROGRAM

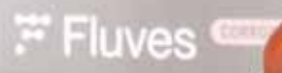
Session	Topic	Speaker	Time	Location
1	Introduction to the Conference	Dr. John Doe	9:00 AM - 10:00 AM	Room 101
2	Keynote: The Future of AI	Dr. Jane Smith	10:30 AM - 12:00 PM	Room 101
3	Panel Discussion: Ethical AI	Panel of Experts	12:30 PM - 2:00 PM	Room 101
4	Workshop: AI in Healthcare	Dr. Alex Lee	2:30 PM - 4:00 PM	Room 102
5	Breakout Session: AI in Finance	Dr. Sarah Kim	2:30 PM - 4:00 PM	Room 103
6	Breakout Session: AI in Education	Dr. Michael Chen	2:30 PM - 4:00 PM	Room 104
7	Breakout Session: AI in Marketing	Dr. Emily White	2:30 PM - 4:00 PM	Room 105
8	Breakout Session: AI in Law	Dr. David Brown	2:30 PM - 4:00 PM	Room 106
9	Breakout Session: AI in Manufacturing	Dr. Lisa Green	2:30 PM - 4:00 PM	Room 107
10	Breakout Session: AI in Retail	Dr. James Black	2:30 PM - 4:00 PM	Room 108
11	Breakout Session: AI in Transportation	Dr. Anna Red	2:30 PM - 4:00 PM	Room 109
12	Breakout Session: AI in Energy	Dr. Robert Blue	2:30 PM - 4:00 PM	Room 110
13	Breakout Session: AI in Agriculture	Dr. Maria Yellow	2:30 PM - 4:00 PM	Room 111
14	Breakout Session: AI in Space Exploration	Dr. Daniel Purple	2:30 PM - 4:00 PM	Room 112
15	Breakout Session: AI in Environmental Science	Dr. Rachel Grey	2:30 PM - 4:00 PM	Room 113
16	Breakout Session: AI in Social Media	Dr. Kevin Orange	2:30 PM - 4:00 PM	Room 114
17	Breakout Session: AI in Cybersecurity	Dr. Nicole Silver	2:30 PM - 4:00 PM	Room 115
18	Breakout Session: AI in Gaming	Dr. Christopher Gold	2:30 PM - 4:00 PM	Room 116
19	Breakout Session: AI in Sports	Dr. Ashley Bronze	2:30 PM - 4:00 PM	Room 117
20	Breakout Session: AI in Entertainment	Dr. Matthew Iron	2:30 PM - 4:00 PM	Room 118
21	Breakout Session: AI in Music	Dr. Sophia Steel	2:30 PM - 4:00 PM	Room 119
22	Breakout Session: AI in Film	Dr. Benjamin Tin	2:30 PM - 4:00 PM	Room 120
23	Breakout Session: AI in Journalism	Dr. Victoria Lead	2:30 PM - 4:00 PM	Room 121
24	Breakout Session: AI in Politics	Dr. Alexander Zinc	2:30 PM - 4:00 PM	Room 122
25	Breakout Session: AI in History	Dr. Isabella Nickel	2:30 PM - 4:00 PM	Room 123
26	Breakout Session: AI in Art	Dr. Benjamin Copper	2:30 PM - 4:00 PM	Room 124
27	Breakout Session: AI in Literature	Dr. Charlotte Nickel	2:30 PM - 4:00 PM	Room 125
28	Breakout Session: AI in Philosophy	Dr. Alexander Nickel	2:30 PM - 4:00 PM	Room 126
29	Breakout Session: AI in Religion	Dr. Isabella Nickel	2:30 PM - 4:00 PM	Room 127
30	Breakout Session: AI in Science Fiction	Dr. Benjamin Nickel	2:30 PM - 4:00 PM	Room 128
31	Breakout Session: AI in Fantasy	Dr. Charlotte Nickel	2:30 PM - 4:00 PM	Room 129
32	Breakout Session: AI in Horror	Dr. Alexander Nickel	2:30 PM - 4:00 PM	Room 130
33	Breakout Session: AI in Mystery	Dr. Isabella Nickel	2:30 PM - 4:00 PM	Room 131
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102	Breakout Session: AI in Drama	Dr. Benjamin Nickel	2:30 PM - 4:00 PM	Room 200


AMPP ITALY 3rd Conference & Expo GENOA, 9-11 June 2024

FIBER OPTICS TECHNOLOGY AS A PREDICTIVE MAINTENANCE TOOL IN THE BATTLE AGAINST CUI

Timothy Van Caekenberghe, Sales Advisor Fluves
Thomas Van Hoorstenberghe, CEO Fluves

Simposio IT, 9-11 June 2024





T. VAN CAELENBERGHE























P. BORTOT

Introduction and Rationale

- Seamless pressure vessels with high strength steels are used for high pressure H₂ storage. Examples include HRSs, where limited amount of hydrogen are stored on site.
- Industrial applications (e.g. refineries or ammonia plants) require large storage volumes (> 5 tons) at medium pressure (~ 200-350 bar).
- Large volumes can be achieved by joining tubular pipes through girth welds. High strength, Q&T steels are preferred for fabricating such assemblies thanks to the light weight.
- This work presents the development and qualification of a new Q&T weldable steel suitable for the construction of large hydrogen storage system.
- Fracture properties were measured in 200 bar H₂, gas on BM, HAZ and WM.



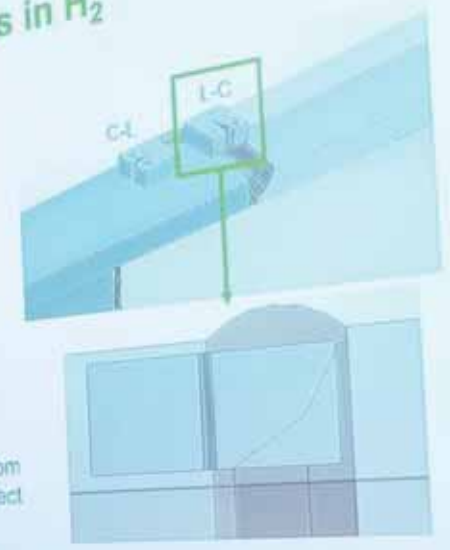
© Bernd, St. Orlowski, M. Bellinger. Fracture properties of high strength ferritic steel welds in both gas service.

Measurement of fracture toughness in H₂

- FT tests performed acc. to ASTM E1820.
- Environment: H₂ (99.999% purity), 200 barg.
- Loading rate < 0.01 MPa m^{3/2} s⁻¹.
- Two independent laboratories.

• Specimen orientation:

- C-L for base material.
- L-C for HAZ (0.5-1.0 mm from FL) and WM.
- C-L cross-weld test with precrack ending at FL, 1 mm from FL and 2 mm from FL with the aim to characterize the effect of microstructure gradients across weld.

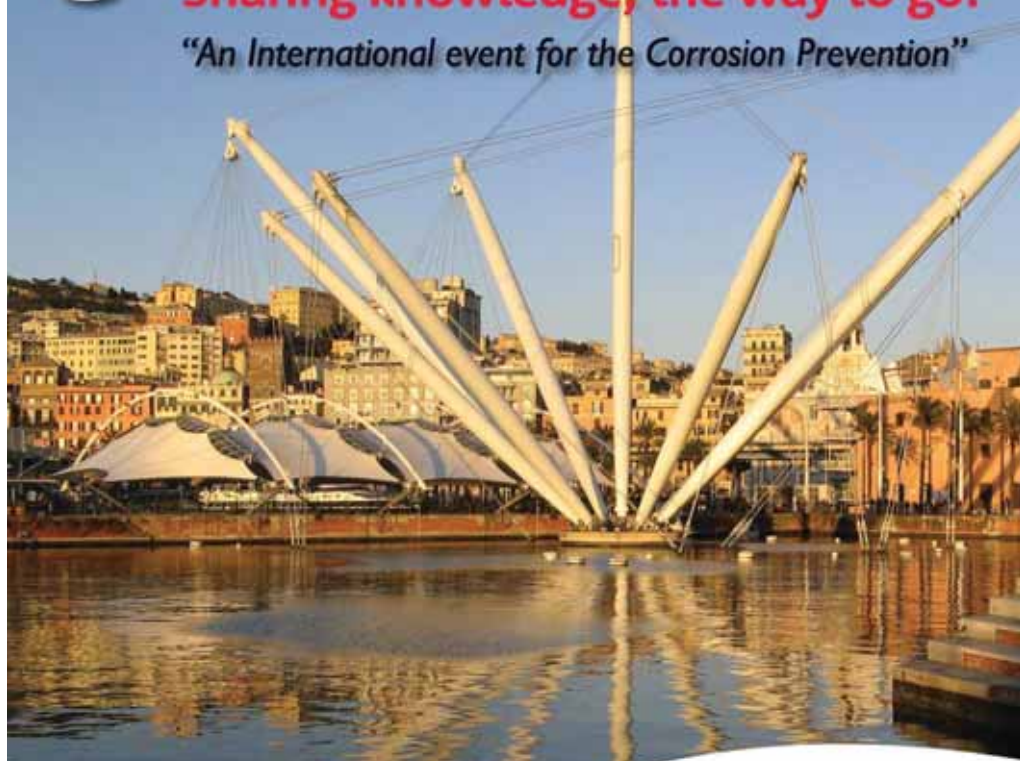


AMPP CHAPTER ITALY GENOA, ITALY
9-11 June 2024

3rd Conference & Expo 2024

Sharing knowledge, the way to go!

“An International event for the Corrosion Prevention”



CONFERENCE PROGRAM AND EXHIBITION INFO

www.amppitaly.org/genoa/2024

PROGRAM AT A GLANCE

		AMPP 3 rd Conference & Expo 2024		AMPP ITALY			
		Sharing knowledge, the way to go!		Genoa, 9-11 June 2024			
		"An International event for the Corrosion Prevention"					
Sunday June 9 th	15:30-17:00	Room Levante - 2nd Floor General Annual Meeting of AMPP ITALY CHAPTER (reserved to AMPP Italy Chapter Members)					
	17:00-18:00	Room Zefiro - 2nd Floor AMPP European Area Task Force Meeting (reserved to AMPP delegates)					
	18:10-18:50	Room Levante - 2nd Floor Plenary Lecture - AMPP generating its future STRONGER TOGETHER					
	17:00-21:00	2nd Floor - Registration					
	19:00-21:00	2nd Floor - Exhibition Opening and Welcome Cocktail					
	Monday June 10 th	08:30-08:45	Room Scirocco & Libeccio - 3rd Floor - Opening Remarks				
08:45-09:20		Plenary Lecture - Alan Thomas - AMPP CEO - AMPP Reimagined					
		Rooms - 3rd Floor		Rooms - 2nd Floor		Room - 1st Floor	
		Scirocco	Libeccio	Levante	Ponente	Aliseo Bora	
09:20-10:10		Energy Transition Carbon Capture Keynote Lecture	Cathodic Protection Keynote Lecture	Coating & Linings Keynote Lecture	Applied Research in Academia Keynote Lecture	CRA & Welding Keynote Lecture	
10:10-10:45		Coffee Break					
10:45-12:25		Energy Transition Carbon Capture	Energy Transition Sour Service	Cathodic Protection Onshore	Coating & Linings Renewables	Applied Research in Academia	CRA & Welding
12:25-14:00		Lunch					
14:00-16:05		Energy Transition Carbon Capture	Energy Transition Sour Service	Cathodic Protection Offshore	Coating & Linings Standards and Qualification	Applied Research in Academia	CRA & Welding
16:05-16:30		Coffee Break					
16:20-18:10		Energy Transition Carbon Capture	Energy Transition Sour Service	Cathodic Protection Management of Interference	Coating & Linings Application & Maintenance	Applied Research in Academia	CRA & Welding
09:30-19:00		Exhibition Hall EXPO					
20:00	Villa dello Zerbino - Gala Dinner						
Tuesday June 11 th		Rooms - 3rd Floor		Rooms - 2nd Floor		Room - 1st Floor	
		Scirocco	Libeccio	Levante	Ponente	Aliseo Bora	
	08:30-10:10	Energy Transition Carbon Capture	Energy Transition Hydrogen Service	Cathodic Protection Looking to the future	Coating & Linings Corrosion under insulation	Corrosion Inhibitors & Monitoring	
	10:10-10:40	Coffee Break					
	10:40-12:45	Energy Transition Carbon Capture	Energy Transition Hydrogen Service	Cathodic Protection Commissioning & Monitoring	Coating & Linings Corrosion under insulation	Corrosion Inhibitors & Monitoring	Durability of Reinforced Concrete
	12:45-14:00	Lunch					
	14:00-15:40	Energy Transition AMPP SC26 Meeting	Energy Transition Hydrogen Service	Energy Transition Renewables Energies	Microbiologically Influenced Corrosion	Automotive Industry	Durability of Reinforced Concrete
	15:40-16:20	Coffee Break					
	16:20-18:30	Failure Analysis	Energy Transition Hydrogen Service	Energy Transition Renewables Energies	Microbiologically Influenced Corrosion	Automotive Industry	Durability of Reinforced Concrete
	18:30-19:30	Closing Remarks and Farewell Cocktail					
	09:30-19:30	Exhibition Hall EXPO					

With the support of:





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AMPP MEDICAL

Thanks and see you for the next event