

# Activities of COOMET TC 1.8 «Physical Chemistry» 2016-2017

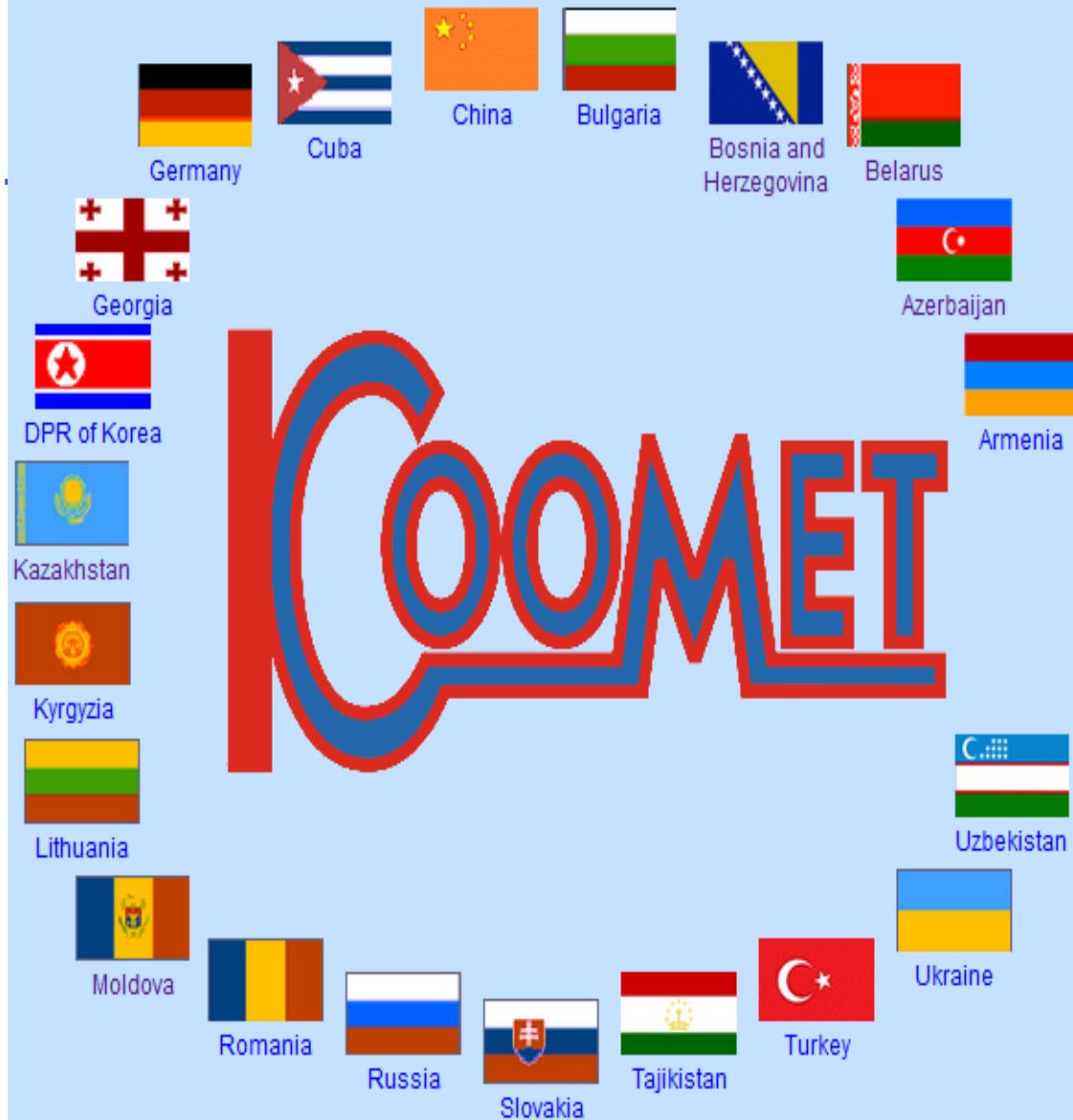
*TC 1.8 Chair  
Deputy Chair*

*Prof. Leonid Konopelko  
Dr. Yury Kustikov*

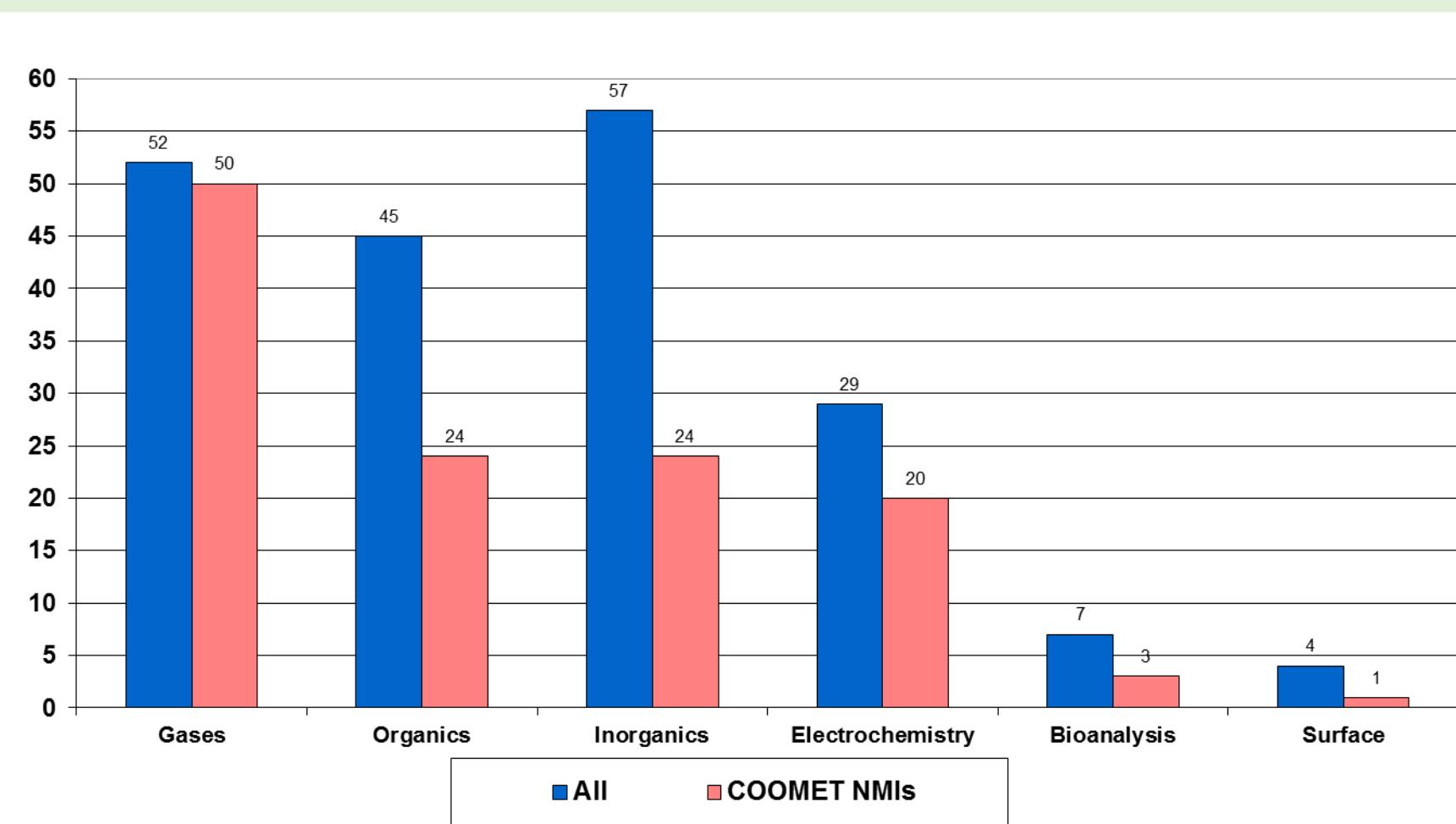
*(VNIIM, Russia)  
(VNIIM, Russia)*

# COOMET TC 1.8 MEMBERS

Armenia (NIM)  
Azerbaijan (AZSTANDARD)  
Belarus (BelGIM)  
Bosnia and Herzegovina (IMBIH) - a.m.  
Bulgaria (BIM)  
China (NIM)  
Cuba (INIMET) – a.m.  
Germany (PTB,BAM) – a.m.  
Georgia (GEOSTM)  
Kazakhstan (KazInMetr)  
Kyrgyzstan (NISM)  
Lithuania (VMT)  
Moldova (NIM)  
North Korea (CIM) – a.m.  
Romania (INM)  
Russia (VNIIM, UNIIM, VNIIFTRI,  
VNIIIFI, VNIIIMS)  
Slovakia (SMU)  
Tajikistan (Tajikstandart)  
Turkey (TUBITAK UME) – a.m.  
Ukraine (Ukrmetrteststandart)  
Uzbekistan (CNS Uz)



# COOMET NMIs activity in CCQM Key Comparisons



# CMC of COOMET NMIs (Amount of Substance) published in BIPM DataBase (Appendix C)

## Distribution between NMIs

VNIIM 571 CMCs (+8 new, 11 rev., 10 del.)	UNIIM 17 CMCs (+13 new)	VNIIFTRI 6 CMCs (+1 rev)	Ukrmetrtest-standard 27 CMCs (+1 new)	BelGIM 16 CMCs (+2 new)	KazInMetr 4 CMC (+2 new)
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## Distribution between Measurement Categories

Gas Analysis	490 (+12 new, 7 rev., 5 del.)
Organic Solutions	24
Inorganic Solutions	15
Metals	14
Sediments, Soils, Ores, and Particulates	9 (+1 new, 4 rev., 5 del.)
Biological Fluids and Materials	4
High Purity Chemicals	30 (+6 new)
Food	8
Water	9
Advanced Materials	12 (+9 new)
Electrochemical Analysis	23 (+1 rev.)
Other materials	3

# **Participation of COOMET in current CCQM and other RMOs Key and Pilot Comparisons. 2016-2017**

<b>Field</b>	<b>COOMET NMI</b>	<b>Number of current comparisons</b>
<b>Gas analysis</b>	<b>VNIIM, KazInMetr</b>	<b>14 (11 CCQM+1 Euramet + 2 APMP)</b>
<b>Inorganic analysis</b>	<b>VNIIM, UNIIM</b>	<b>7 (CCQM)</b>
<b>Electrochemical analysis</b>	<b>VNIIFTRI, UNIIM, VNIIM, Ukrmetrteststandart</b>	<b>7(6 CCQM +1 APMP)</b>
<b>Organic analysis</b>	<b>VNIIM</b>	<b>7 (CCQM)</b>
<b>Bio analysis</b>	<b>VNIIM, VNIIMS</b>	<b>2 (CCQM)</b>

# Current COOMET Intraregional Comparisons 2016-2017 (1)

Code	Name	Pilot NMI	Other Participants	Status
COOMET.QM-S3.2015 (664/RU/15)	Supplementary comparison "Atmospheric air pollutants: CO in Nitrogen, 5 µmol/mol"	VNIIM	KazinMetr, BelGIM	Final report
COOMET.QM-K111 (678/RU/15)	Key comparison "Propane in Nitrogen, 1000 ppm"	VNIIM	KazInMetr, BelGIM, Ukrmetrteststandard	Draft B
COOMET.QM-S4.2015 (622/RU/13)	Supplementary comparison "C3-C5 components in mixtures of liquified hydrocarbons"	VNIIM	Ukrmetrteststandart, BelGIM	In progress
COOMET 519/RU/11	Pilot comparison in the field of measurements of ethanol mass fraction in aqueous solutions	VNIIM	Ukrmetrteststandart, CSM ME, INSM (Moldova)	Final report
COOMET Pr611/RU/13	Pilot comparison "Melamine in milk powder".	VNIIM	Ukrmetrteststandart, UNIIM	In progress
COOMET 654/RU/14	Pilot comparison "Cholesterol in human serum"	VNIIM	CSM ME (Kyrgyzstan), VNIIIFI	Preparation of samples

# Current COOMET Intraregional Comparisons. 2016-2017 (2)

Code	Name	Pilot NMI	Other Participants	Status
COOMET 649/RU/14	Pilot comparison "Study in the field of measuring of formed elements of blood: erythrocytes (RBC), leukocytes (WBC)"	VNIIM	CSM ME (Kyrgyzstan)	Final report
COOMET 691/RU/16	Pilot comparison «Determination of polychlorinated dibenzo-p-dioxins and dibenzofurans in fat matrices (pork fat)»	VNIIM	BVL, BelGIM, Ukrmetrteststandart, UNIIM, KazInMetr	Draft A
COOMET 708/RU/16	Pilot comparison “Purity of anthracene (100 minus admixtures)	VNIIM	Ukrmetrteststandart, UNIIM	Distribution of samples

COOMET 655/RU/15	Pilot study on pH measurement of phosphate buffer (pH~7.0)	VNIIFTRI	PTB, TUBITAK, GeoSTM, KazInMetr, BelGIM, VNIIM, NIM (Moldova), CSM ME, UNIIM and other labs	Draft A
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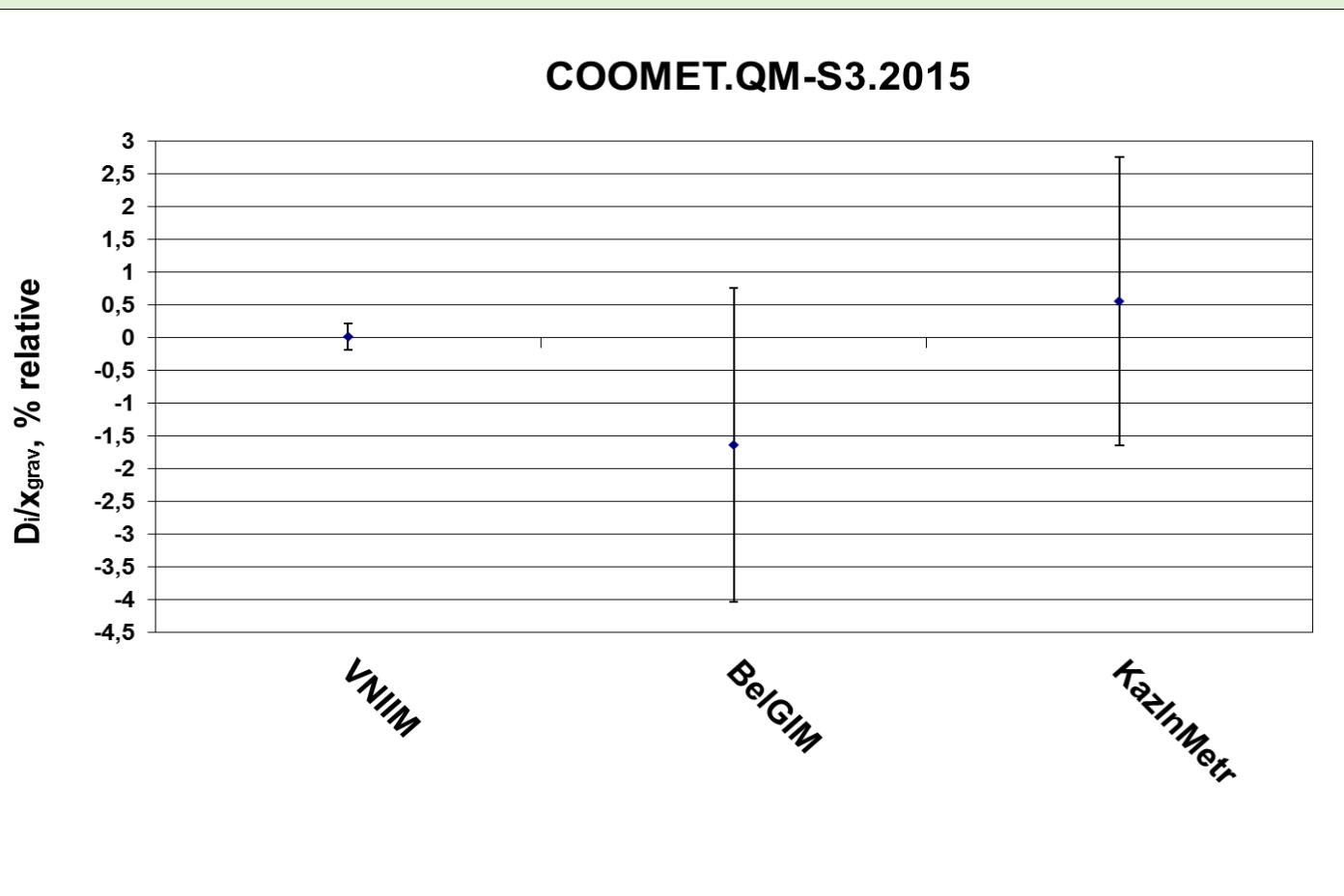
# Current COOMET Intraregional Comparisons. 2016-2017 (3)

Code	Name	Pilot NMI	Other Participants	Status
COOMET 645/RU/14	Pilot comparisons in the field of measuring of mass fraction of copper and impurities in the oxygen-free copper wire rod for determination of copper purity	UNIIM	Ukrmetrteststandart, VNIIIFI, TÜBİTAK UME	Draft B
COOMET 672/RU/15	Pilot comparisons in the field of measuring the mass fraction of iron in iron	UNIIM	Ukrmetrteststandart, BelGIM, VNIIIFI	Draft A
COOMET 650/RU/14	Pilot comparisons in the field of metals mass fraction measurements (Al, As, Ca, Mg, Pb, Sb, Au, Ag, Ni) in slag (Part II)	UNIIM	VNIIIFI, BelGIM, Ukrmetrteststandart	Measurements in progress
COOMET 692/RU/16	Pilot comparisons in the field of measuring of moisture mass fraction in wood	UNIIM	BelGIM, Ukrmetrteststandart, KazInMetr, INM (Romania)	Draft A

# Results of the last COOMET comparisons

COOMET.QM-S3.2015

Supplementary comparison "Atmospheric air pollutants: CO in Nitrogen, 5  $\mu\text{mol/mol}$ "

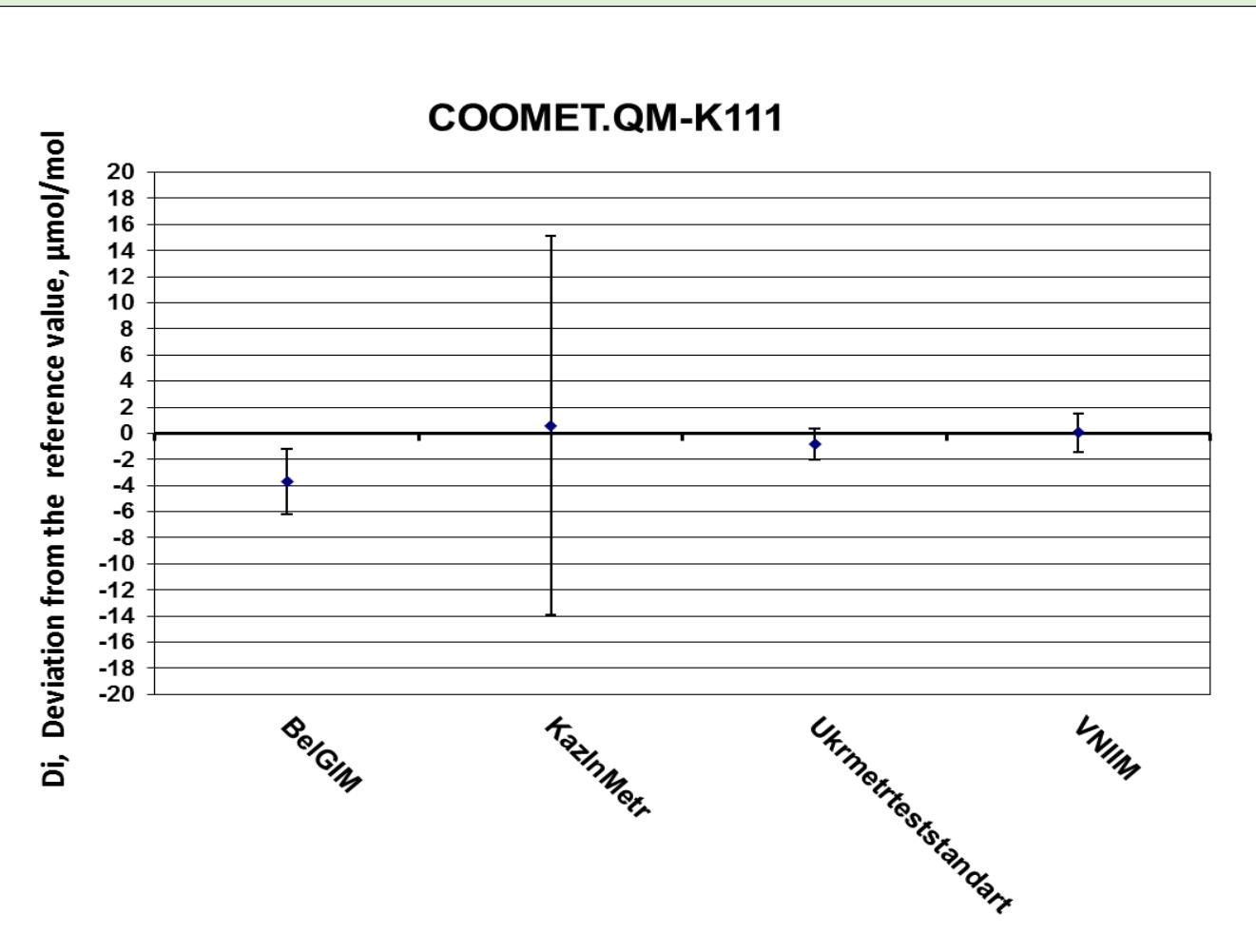


**Participants:**  
VNIIM,  
KazinMetr,  
BelGIM

# Results of the last COOMET comparisons

COOMET.QM-K111

Key comparison " Propane in nitrogen"



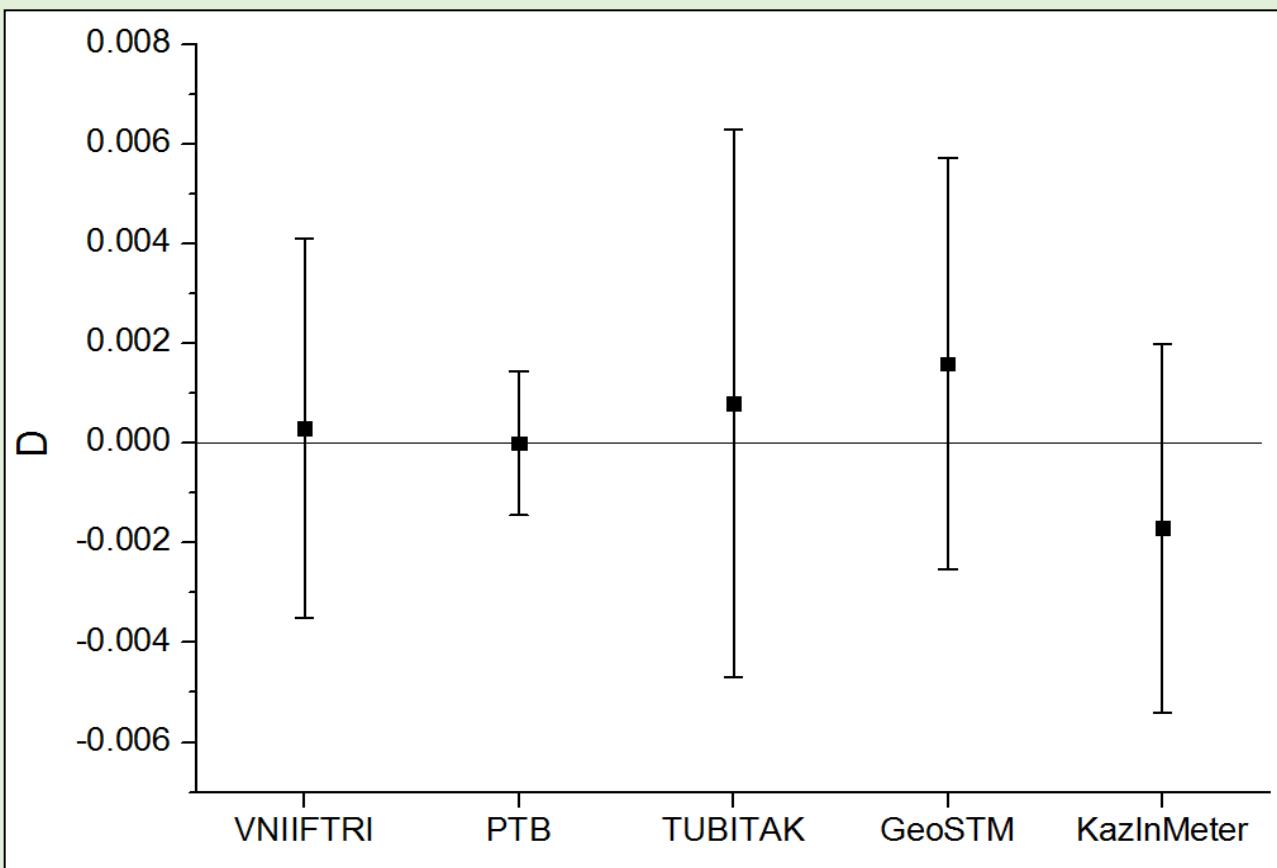
Participants:  
VNIIM,  
BelGIM,  
KazinMetr,  
Ukrmetrteststandart

# Results of the last COOMET comparisons

COOMET 655/RU/15

Pilot study on pH measurement of phosphate buffer ( $\text{pH} \sim 7.0$ )

Deviation from the reference value –  
primary method

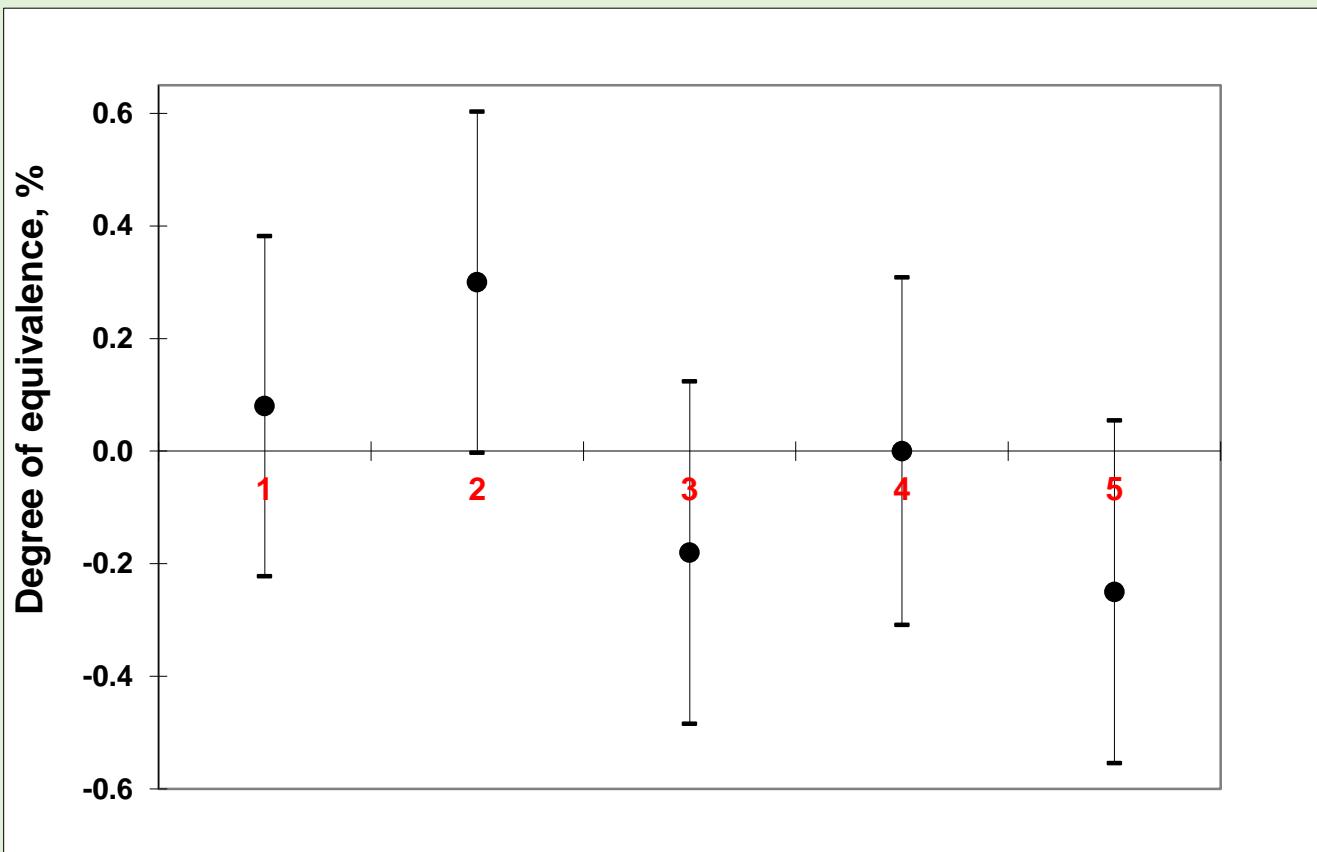


Participants:  
VNIIFTRI, PTB,  
Tubitak, GeoSTM,  
KazinMetr

# Results of the last COOMET comparisons

COOMET 692/RU/16

Pilot comparisons in the field of measuring of moisture mass fraction in wood

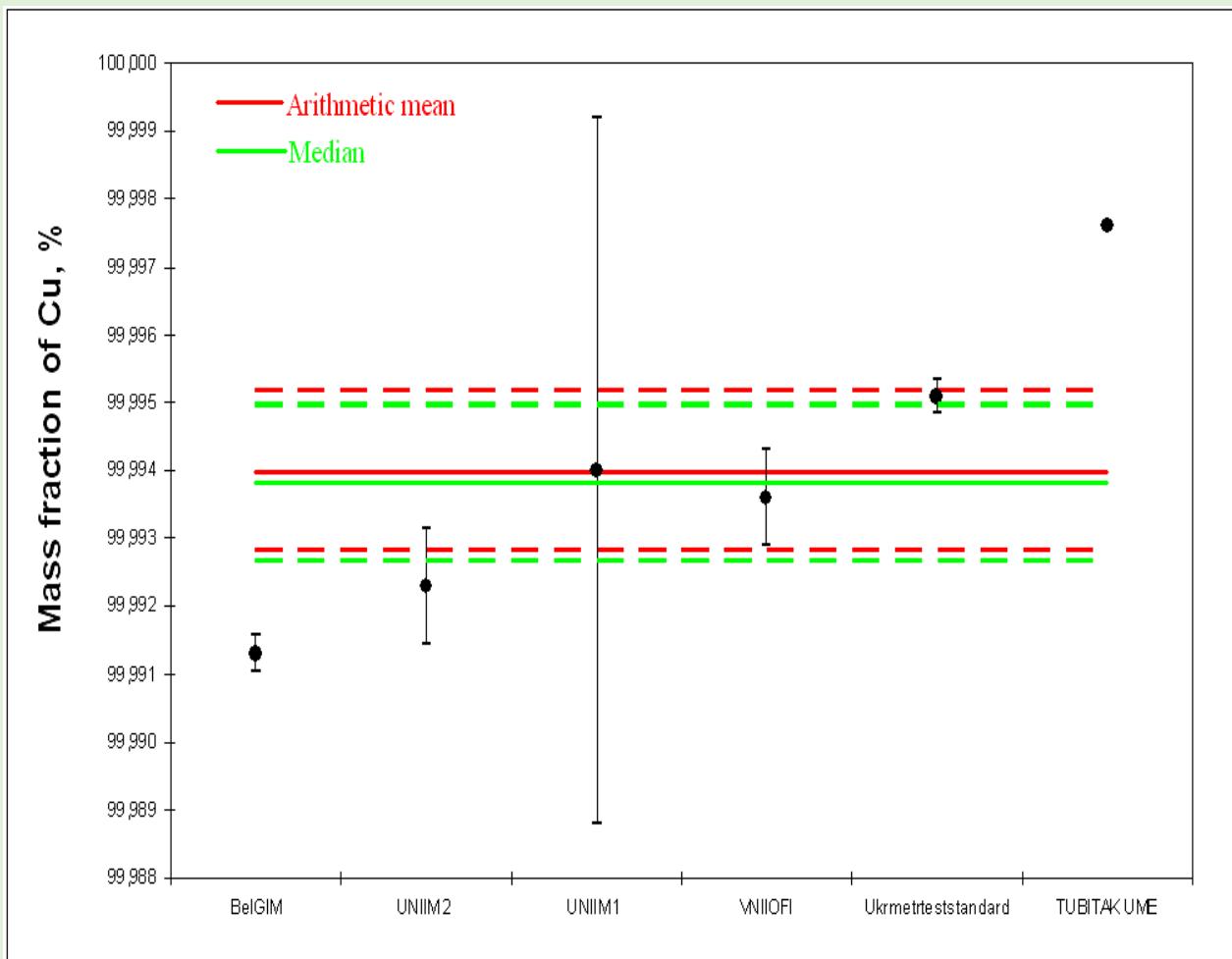


**Participants:**  
UNIIM,  
BelGIM,  
KazinMetr,  
Ukrmetrteststandart,  
INM (Romania)

# Results of the last COOMET comparisons

## COOMET 645/RU/14

Pilot comparisons in the field of measuring of mass fraction of copper and impurities in the oxygen-free copper wire rod for determination of copper purity



Participants:  
UNIIM,  
BelGIM,  
Ukrmetrteststandart,  
VNIIOFI,  
TÜBİTAK UME

# **Meetings and events 2016-2017**

- The last meeting of COOMET TC 1.8 “Physical chemistry” was hold in May 24-25, 2016 (St. Petersburg, VNIIM);
- The next meeting of TC 1.8 “Physical chemistry” will be hold in May 23-24, 2017 (St. Petersburg, VNIIM)
- Celerbration of 175-th Anniversary of VNIIM (June 2017)



Thank you for attention!