

## ICCP Working Group Identification of Thermal Maturity Relevant Organic Matter 2021 Report

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Presented for ICCP Commission II, September, 2021

# Outline

- Problem to be solved
- History of the ICCP working group
- o 2020 publication
- Summary & proposal for new activities



# **Objective of the working group**



• Provide guidelines for identification of thermal maturity relevant organic matter population in dispersed organic matter





## History of the working group

- Proposed by Angeles Borrego 2008 Oviedo
- DOMVR survey 2009 Gramado, ICCP News No. 48
- ASTM standard D7708 in 2011 ASTM Standards





## History of the working group, cont.

- ASTM D7708 interlaboratory study (ILS) in 2012-2013
- Results presented Sosnowiec 2013
- Results presented AAPG, Houston, USA, 2014
- Results published in J. Marine and Petroleum Geology, 2015 (100+ citations)

Porto 2011 Beijing 2012 Sosnowiec 2013 Kolkata 2014 Potsdam 2015

#### History of the working group cont. Second interlaboratory study, 2015-2016 $\bigcirc$ **Results presented Houston 2016** $\bigcirc$ **Discussions**, 2017-2018 $\bigcirc$ Manuscript published, Marine & Pet. Geol., April $\bigcirc$ 2020 Potsdam 2015 Houston 2016 Bucharest 2017 Brisbane 2018 The Hague 2019 Prague 2021





## 2015-2016 Interlaboratory Study (ILS)



Vit., vitrinite; S.B., solid bitumen; ASMSD, average signed multiple of standard deviation; IQR, interquartile range; F10–F-90, excluding values ouside of 10–90 percentile range; ISMSD, individual signed multiple of standard deviation.

# Summary of 2015-2016 ILS



- The results (all inclusive) were terrible for reproducibility
- A statistical method was required to eliminate outliers
- Solid bitumen vs vitrinite identifications continue to plague organic petrography of NA shales
- These samples were representative of NA shales, and high TOC



### Summary of reproducibility (R)

- Oil window (e.g., Bakken): R ~0.1 to 0.2
- Wet gas/condensate window (e.g., Woodford): R ~0.3
- Dry gas window (e.g., Marcellus): R ~0.4 to 0.5
- Similar to previous studies
- Indicates continued need for improvement/standardization
- Provides realistic uncertainty in R<sub>o</sub> measurement



### **Proposal for New Activities 2021-2022**

- A photographic round robin with same samples to see what people identify as vitrinite vs solid bitumen
- Use marked PowerPoint with Excel template for answers
- A round robin using Hilgers Fossil Student on calibrated images from same samples

