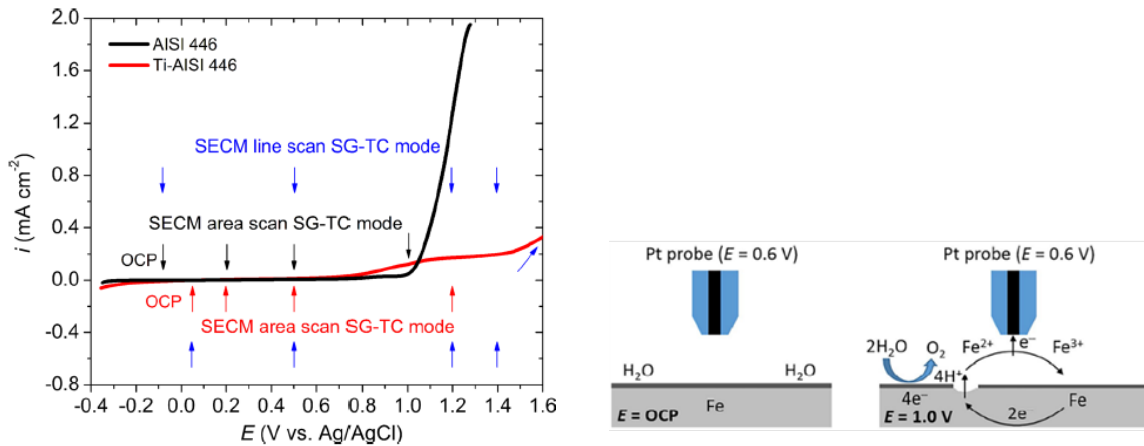
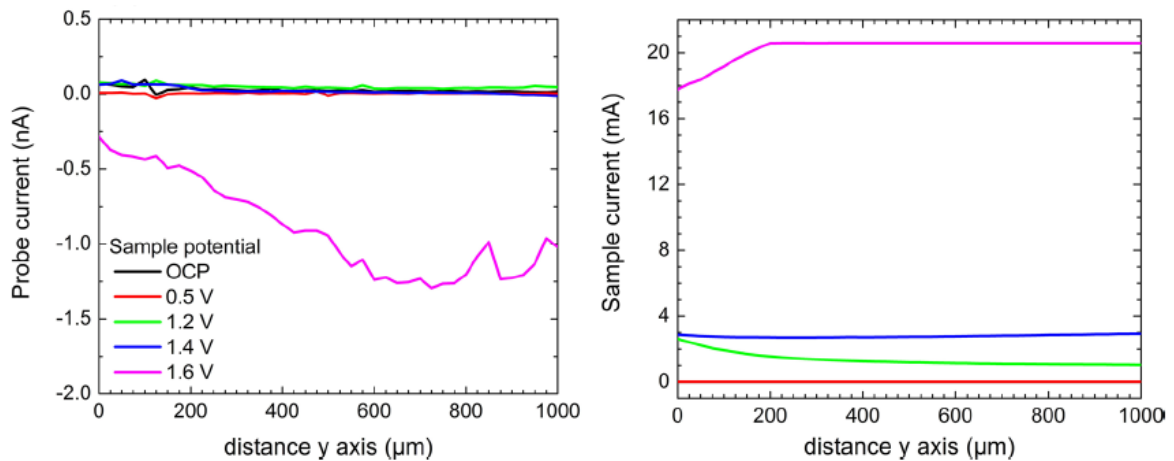


Results 2023

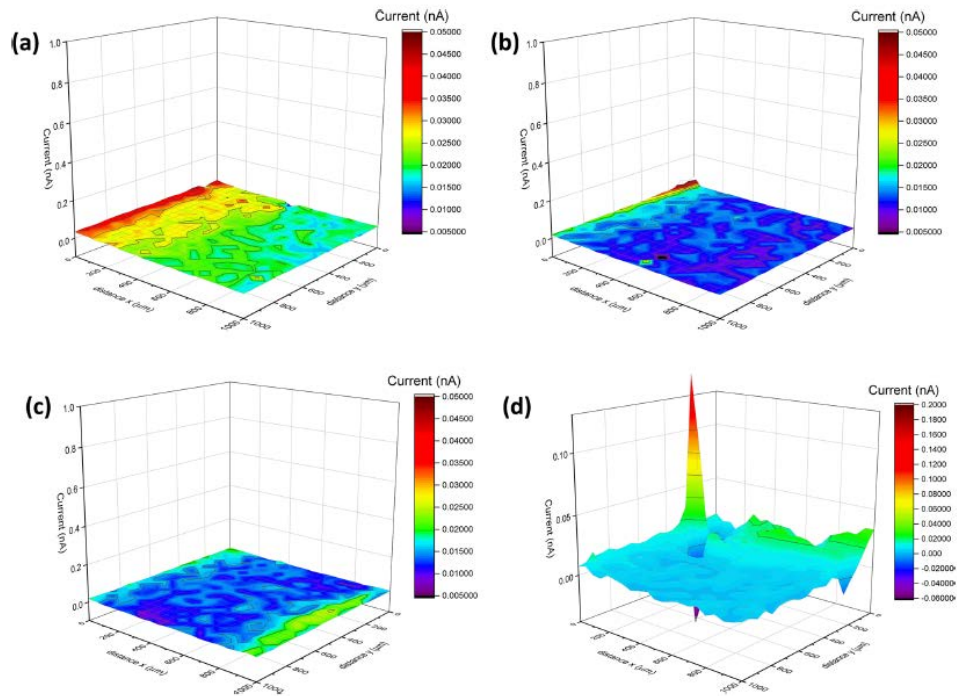
Further analysis was made using a scanning electrochemical microscopy (SECM) of the ferritic stainless steel substrate (AISI446) and to extend the SECM measurements on Ti coated AISI446. The results were published in Acta Metallurgica SINICA January 2024 (<http://link.springer.com/journal/40195>).



The SECM measurements were performed using a Uniscan Instruments M370 scanning electrochemical workstation, samples made from AISI 446 and Ti coated AISI 446, in various testing solutions (0.1 M Na₂SO₄ and 0.1 M KCl). The figure to the right shows the polarization curves of AISI 446 and Ti-coated AISI 446 in 0.1 M Na₂SO₄ and overview of potentials selected for SECM measurements. To the right is Schematic representation of reaction model for AISI 446 during SG-TC mode.



The SECM line scans from the same publication of Ti-coated AISI 446 obtained at 20 μm substrate distance at different potentials of the substrate are shown here, where the probe current is to the left and sample current to the right.



Above are the SCEM area scans of uncoated AISI 446 with tip biased at $E=0,6$ and the AISI 446 substrate at **a** OCP, **b** 0.2 V vs. Ag/AgCl, **c** 0.5 V vs. Ag/AgCl and **d** 1.0 V vs. Ag/AgCl. Conditions: substrate tip distance is 20 μm , scan velocity 50 $\mu\text{m/s}$, step size 50 μm . Substrate generation–tip collection mode

In January 2023 the partners were finally able to meet again after Covid. The project meeting was held in Timisoara January 2023. A workshop called "Renewable energy – Hydrogen challenges" was organized in Politehnica University Timisoara on the occasion of the visit of the partners from SINTEF.

The poster is for a workshop titled "Renewable energy - Hydrogen challenges" held on Wednesday, January 18th, 2023, at 10:00 a.m. in the library of Politehnica University Timisoara, Romania. It features logos for Iceland, Liechtenstein, and Norway grants; SINTEF AS Norway; CoDe-PEM Project (EEA Grants 2019-2024); UEFISCDI (Executive Agency for Higher Education, Research, Development and Innovation Funding); and UP (Politehnica University Timisoara Romania). The workshop includes an opening speech by Prof. dr. ing. Liviu Marsavina and presentations on renewable energy in Norway, CoDe-PEM project details, and Romanian contributions. A list of workshop presentations includes: Renewable energy in Norway - SINTEF experience (Sigrid Lædre, Thulile Khoza); CoDe-PEM – A Norway – Romania EEA Project (Corneliu-Marius Craciunescu); Romanian contribution in Horizon 2020 PRETZEL Project (Andrea Kellenberger); National Institute of Research and Development for Electrochemistry and Condensed Matter (Florin Ionel Balcu); and Discussions. The project is financed through the fund of the Research Programme and administered by UEFISODI. More information is available at www.eeagrants.org/ and www.eeagrants.ro. The slogan is "Working together for a green, competitive and inclusive Europe".



A researchers' night was also organized at Politehnica University Timisoara. Below you can see professor Craciunescu showing the laboratories to participants.

The poster is for "EUROPEAN RESEARCHERS NIGHT" and features logos for Iceland, Liechtenstein, and Norway grants; CoDe-PEM; UEFISCDI; and UP (Politehnica University Timisoara). The main title is "Combinatorial Design of Novel Bipolar Plate Coatings for Proton Exchange Membrane Electrolyzers - CoDe-PEM Project 2019-2024". The project website is <https://www.sintef.no/projectweb/codepem/>. It describes a system for deposition of compositional spread libraries and lists the CoDe-PEM Project goals: "The CoDe-PEM project contributes towards the development of affordable Proton Exchange Membranes (PEM) electrolysis systems through the development of lower cost coating materials for bipolar plates by the development of high performance coatings that would lead to a cost reduction of bipolar plates (BPP)". The total budget from the programme is 1,495,151.00 Euro, consisting of an EEA Grant (85%) of 1,270,878.35 Euro and Romanian Co-financing (15%) of 224,272.65 Euro. The Norwegian Partner is SINTEF and the Romanian Partner is Politehnica University Timisoara. The slogan is "Working together for a green, competitive and inclusive Europe".

