

## Program of the workshop “Plasma technology for CO<sub>2</sub> reforming and In-Situ Resource Utilization”

Monday 19 <sup>th</sup> September	
<b>9:00-9:30</b>	<b>Opening address</b>
<b>9:30-10:00</b>	<i>Guoxing Chen</i> : Plasma assisted catalytic reaction-separation coupling for CO <sub>2</sub> conversion
<b>10:00-10:30</b>	<i>Carminha Bacariza</i> : Designing catalysts for methane dry reforming: the potential of...
<b>10:30-11:00</b>	<b>Coffee break</b>
<b>11:00-11:30</b>	<i>Milan Simek</i> : Streamer micro-discharge as a reference data source for the improvement and...
<b>11:30-12:00</b>	<i>Carmen Garcia</i> : Plasma-Assisted Flow Reactors: Transitioning from Lab to Application
<b>12:00-13:30</b>	<b>Lunch break</b>
<b>13:30-14:20</b>	<i>João Vargas</i> : The Quasi-Classical Trajectory Framework: a crash course
<b>14:20-14:50</b>	<i>Nikolay Britun</i> : An overview of CO <sub>2</sub> and N <sub>2</sub> conversion efficiency in non-thermal plasmas
<b>14:50-15:30</b>	<b>Coffee break</b>
<b>15:30-16:00</b>	<i>Maik Budde</i> : From Exhaust Gas to Mars - H <sub>2</sub> O-Electron Collision Cross Sections for Modelling of ...
<b>16:00-16:30</b>	<i>Nuno Pinhão</i> : Vibrational cross sections of methane: from individual cross sections to ...

Tuesday 20 <sup>th</sup> September	
<b>9:30-10:00</b>	<i>Michail Tsampas</i> : Plasma activated electrocatalysis – talk via zoom
<b>10:00-10:30</b>	<i>Xingyu Chen</i> : Enhancement of oxygen permeation through SOEC with He/O <sub>2</sub> plasma
<b>10:30-11:00</b>	<b>Coffee break</b>
<b>11:00-11:30</b>	<i>Pedro Viegas</i> : Modelling chemistry and transport in microwave plasma discharges for CO <sub>2</sub>
<b>11:30-12:00</b>	Omar Biondo: Insights into the limitations to vibrational excitation of CO <sub>2</sub>
<b>12:00-13:30</b>	<b>Lunch break</b>
<b>13:30-14:20</b>	<i>Nikolay Britun</i> : Extended optical characterization of a He-based nanosecond jet discharge
<b>14:20-14:50</b>	<i>Edmond Baratte</i> : Absolute O atom density measurements by actinometry
<b>14:50-15:30</b>	<b>Coffee break</b>
<b>15:30-16:00</b>	<i>José Afonso</i> : Simulation of Plasma-Surface Interactions
<b>16:00-16:30</b>	<i>Chloe Fromentin</i> : Kinetic mechanisms in CO <sub>2</sub> -N <sub>2</sub> plasmas: Development of a reaction

## Monday 19<sup>th</sup> September

9:00 – 9:30 Opening Address

*Session 1* Chairman:

9:30 – 10:00 Guoxing Chen (Fraunhofer IWKS, Germany)

Plasma assisted catalytic reaction-separation coupling for CO<sub>2</sub> conversion

10:00 – 10:30 Carminha Bacariza (Centro de Química Estrutural, Portugal)

Designing catalysts for methane dry reforming: the potential of metal-based zeolites

10:30 – 11:00 **Coffee Break**

11:00 – 11:30 Milan Simek (Institute of Plasma Physics, Czech Republic)

Streamer micro-discharge as a reference data source for the improvement and validation of advanced kinetic schemes

11:30 – 12:00 Carmen Guerra-Garcia (Massachusetts Institute of Technology, USA)

Plasma-Assisted Flow Reactors: Transitioning from Lab to Application

12:00 – 13:30 **Lunch Break**

13:30 – 14:20 João Vargas (King Abdullah University of Science and Technology, Saudi Arabia)

The Quasi-Classical Trajectory Framework: a crash course

14:20 – 14:50 Nikolay Britun (University of Nagoya, Japan)

An overview of CO<sub>2</sub> and N<sub>2</sub> conversion efficiency in non-thermal plasmas

14:50 – 15:30 **Coffee Break**

15:30 – 16:00 Maik Budde (Eindhoven University of Technology, The Netherlands)

From Exhaust Gas to Mars - H<sub>2</sub>O-Electron Collision Cross Sections for Modelling of CO<sub>2</sub>-H<sub>2</sub>O Plasma

16:00 – 16:30 Nuno Pinhão (Centro de Tecnologia Nuclear, Portugal)

*Vibrational cross sections of methane: from individual cross sections to polyad groups*

## Tuesday 20<sup>th</sup> September

Session 2      Chairman:

**9:30 – 10:00**    Michail Tsampas (Dutch Institute for Fundamental Research, The Netherlands)  
Plasma activated electrocatalysis (talk via zoom)

**10:00 – 10:30**    Xingyu Chen (Dutch Institute for Fundamental Research, The Netherlands)  
Enhancement of oxygen permeation through SOEC with He/O<sub>2</sub> plasma

**10:30 – 11:00**    **Coffee Break**

**11:00 – 11:30**    Pedro Viegas (Institute for Plasmas and Nuclear Fusion, Portugal)  
Modelling chemistry and transport in microwave plasma discharges for CO<sub>2</sub> conversion

**11:30 – 12:00**    Omar Biondo (University of Antwerp, Belgium)  
Insights into the limitations to vibrational excitation of CO<sub>2</sub>: validation of a kinetic model with pulsed glow discharge experiments

**12:00 – 13:30**    **Lunch Break**

**13:30 – 14:20**    Nikolay Britun (University of Nagoya, Japan)  
Extended optical characterization of a He-based nanosecond jet discharge

**14:20 – 14:50**    Edmond Baratte (Laboratoire de Physique de Plasma, France)  
Absolute O atom density measurements by actinometry: comparison to cavity ring-down spectroscopy

**14:50 – 15:30**    **Coffee Break**

**15:30 – 16:00**    José Afonso (Institute for Plasmas and Nuclear Fusion, Portugal)  
Simulation of Plasma-Surface Interactions

**16:00 – 16:30**    Chloé Fromantain (Institute for Plasmas and Nuclear Fusion, Portugal)  
Kinetic mechanisms in CO<sub>2</sub>-N<sub>2</sub> plasmas: Development of a reaction mechanism