

| International Summer School - HYDROGEN Nancy 2025 - <i>Materials &amp; Transfer Phenomena in H2 Technologies</i> |                                                                                                          |  |               |                                                                                                                    |                                   |                                                                                                                                       |                                                                                                             |
|------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|--|---------------|--------------------------------------------------------------------------------------------------------------------|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Day/Venue                                                                                                        | Monday 7th<br>(FST – Amphi 3)                                                                            |  |               | Tuesday 8th<br>(FST – Amphi 3)                                                                                     | Wednesday 9th<br>((FST – Amphi 3) | Thursday 10th<br>(FST – Amphi 3)                                                                                                      | Friday 11th<br>(FST – Amphi 3)                                                                              |
|                                                                                                                  |                                                                                                          |  | Chair:        |                                                                                                                    |                                   |                                                                                                                                       |                                                                                                             |
|                                                                                                                  |                                                                                                          |  | 8:30 – 9:30   | Fuel cell & Electrolyzer:<br>fundamentals of<br>electrochemistry and<br>transfer phenomena<br>(M. Chatenet, LEPMI) | Pitch presentation III            | HYCar Project: from<br>technical aspect of fuel<br>cell-supercapacitors<br>source in a car to is<br>environment<br>(F. Lapique, LRGP) | Membrane for fuel<br>cells/electryzers: state<br>of art & issues<br>(C. Iojoiu, LEPMI)                      |
|                                                                                                                  |                                                                                                          |  | 9:30 – 10:30  | Electrode Materials<br>(F. Micoud, CEA Liten)                                                                      |                                   | Mechanical behavior and<br>damage of materials in<br>low and high pression<br>hydrogen tanks<br>(A. Maynadier, FEMTO-ST)              | NMR techniques for<br>studying transport<br>phenomena in ionomer<br>membranes<br>(J-C. Perrin, LEMTA)       |
| 11:00                                                                                                            | Reception &<br>Registration                                                                              |  | 10:30 -11:00  | Coffee break                                                                                                       |                                   |                                                                                                                                       |                                                                                                             |
|                                                                                                                  |                                                                                                          |  | 11:00 – 12:00 | Impedance Spectroscopy<br>as tool to characterize<br>transfer phenomena<br>(J. Mainka, LEMTA)                      | Visit of HY2Car<br>Platform       | Carbon materials for H2<br>storage and compression:<br>state-of-the-art and issues<br>(G. Sdanghi, LEMTA /<br>V. Fierro, IJL)         | The role of hydrogen in<br>the future energy<br>system, an<br>economic perspective<br>(C. Mégy, CEA I-tésé) |
| 12:00 – 13:30                                                                                                    | Lunch Buffet                                                                                             |  | 12:00 – 13:30 | Lunch break                                                                                                        |                                   |                                                                                                                                       |                                                                                                             |
| Chair:                                                                                                           |                                                                                                          |  | Chair:        |                                                                                                                    | City tour                         | Visit of LEMTA<br>Platform & Workshop                                                                                                 |                                                                                                             |
| 13:45 – 14:00                                                                                                    | Opening Session<br><i>(head of the LEMTA)</i>                                                            |  | 13:30 – 15:30 | Pitch presentation I                                                                                               |                                   |                                                                                                                                       |                                                                                                             |
| 14:00 – 15:30                                                                                                    | FCLAB presentation<br><i>(David Bouquain, Femto-ST)</i>                                                  |  |               |                                                                                                                    |                                   |                                                                                                                                       |                                                                                                             |
|                                                                                                                  | Presentation of the FRH2 –<br>National French Hydrogen<br>Research Federation (CNRS)<br>(Daniel Hissel ) |  |               |                                                                                                                    |                                   |                                                                                                                                       |                                                                                                             |
|                                                                                                                  | H2 Strategies (France 2030 &<br>PEPR-H2...): issues & projects<br>(H. Burlet , CEA)                      |  |               |                                                                                                                    |                                   |                                                                                                                                       |                                                                                                             |
| 15:30 – 16:00                                                                                                    | Coffee break                                                                                             |  | 15:30 – 16:00 | Coffee break                                                                                                       |                                   | Coffee break                                                                                                                          |                                                                                                             |
| 16:00 – 17:00                                                                                                    | Materials for fuel cell &<br>electrolyzer: Industrial point of<br>view<br>(M. Daoudi,Alstom)             |  | 16:00 – 17:00 | Pitch presentation II                                                                                              |                                   | Visit of LEMTA<br>Platform & Workshop                                                                                                 |                                                                                                             |
| 17:00                                                                                                            | Welcoming COCKTAIL                                                                                       |  |               |                                                                                                                    | Gala Dinner (19h30)               |                                                                                                                                       |                                                                                                             |