



## The 8<sup>th</sup> Korea-EU Workshop on Graphene and Related 2D Materials

- \* **Date:** 22-23 May, 2023  
 \* **Venue:** Baekyang-Nuri, Yonsei University, Seoul  
 \* **Host:** Korea Graphene Society, Graphene Flagship

### \* Scope

The workshop aim is to be a Forum for the exchange of experiences, practices and ideas related to the current and emerging topics associated with the basic chemistry approach, materials synthesis, application development and commercialization for graphene and related 2D materials. In addition, the objective is to explore further possibilities for collaborative research opportunities between researchers in Europe and Korea.

### \* Program

**22 May.(MON)**

| Time                              | Program                                                                                 | Speaker                                     |
|-----------------------------------|-----------------------------------------------------------------------------------------|---------------------------------------------|
| 9:10-9:20                         | Opening Remarks                                                                         |                                             |
| 9:20-11:50                        | Session 1                                                                               | Chair: Tae-Woo Lee (SNU)                    |
| 9:20-9:40                         | GrapheneFlagship: a look at its ten years' voyage and the way ahead                     | Jari Kinaret (Chalmers Univ. Sweden)        |
| 9:40-10:10                        | Optical spectroscopy of twisted TMD heterostructures                                    | Hyeonak Cheong (Sogang Univ. Korea)         |
| 10:10-10:40                       | Advances in 2D semiconductors-based multifunctional high-performance electronics        | Paolo Samori (Univ. of Strasbourg, France)  |
| 10:40-10:50                       | Coffee Break                                                                            |                                             |
| 10:50-11:20                       | From Graphene Oxide Liquid Crystal to Artificial Muscle                                 | Sang Ouk Kim (KAIST, Korea)                 |
| 11:20-11:50                       | 2D Materials for energy applications                                                    | Francesco Bonaccorso (BeDimensional, Italy) |
| 11:50-13:15                       | Lunch                                                                                   |                                             |
| 13:15-15:15                       | Session 2                                                                               | Chair: Paolo Samori (Univ. of Strasbourg)   |
| 13:15-13:45                       | Interferometric Second-Harmonic Generation in Two-Dimensional Heterocrystals            | Sunmin Ryu (POSTECH, Korea)                 |
| 13:45-14:15                       | Electrothermal Applications of Graphene for Consumer Electronics                        | Byung Hee Hong (SNU, Korea)                 |
| 14:15-14:45                       | 2D materials to modulate brain networks and synapses                                    | Laura Ballerini (SISSA, Italy)              |
| 14:45-15:15                       | Heterointerface Engineering in van der Waals Heterostructures by Interlayer Interaction | Gwang-Hyoung Lee (SNU, Korea)               |
| 15:15-15:30                       | Coffee Break                                                                            |                                             |
| 15:30-17:30                       | Session 3                                                                               | Chair: Gwan-Hyoung Lee (SNU)                |
| 15:30-16:00                       | MXene and Graphene 2D Electrodes for Flexible and Stretchable Optoelectronics           | Tae-Woo Lee (SNU, Korea)                    |
| 16:00-16:30                       | Are 2D materials limited to Van der Waals layered materials?                            | Mar Garcia Hernandez (CSIC, Spain)          |
| 16:30-17:00                       | To be announced                                                                         | Andrea Ferrari (Univ. of Cambridge, UK)     |
| 17:00-17:30                       | Interface Band Engineering Toward High-Performance 2D Semiconductor Electronics         | Chul-Ho Lee (SNU, Korea)                    |
| Closing of the first day Workshop |                                                                                         |                                             |

**23 May.(TUE)**

| Time            | Program                                                                                            | Speaker                                             |
|-----------------|----------------------------------------------------------------------------------------------------|-----------------------------------------------------|
| 9:10-12:00      | Session 4                                                                                          | Chair: Marco Romagnoli (CNIT)                       |
| 9:10-9:40       | Unconventional Phase Transitions in Layered 2D Materials                                           | Young-Woo Son (KIAS, Korea)                         |
| 9:40-10:10      | Ferroelectric domain structures in twistronic TMD bilayers                                         | Vladimir Fal'ko (The Univ. of Manchester, UK)       |
| 10:10-10:30     | Coffee Break                                                                                       |                                                     |
| 10:30-11:00     | Advances in Organic 2D Crystals - From On-Water Surface Chemistry to Functional Applications       | Xinliang Feng (Technical Univ. of Dresden, Germany) |
| 11:00-11:30     | Direct growth of MoS <sub>2</sub> on low temperature substrates for emerging electronics           | Jong-Hyun Ahn (Yonsei Univ., Korea)                 |
| 11:30-12:00     | Enabling 2D-materials process transfer from lab-to-fab                                             | Inge Asselberghs (IMEC, Belgium)                    |
| 12:00-13:30     | Lunch                                                                                              |                                                     |
| 13:30-15:30     | Session 5                                                                                          | Chair: Jong-Hyun Ahn (Yonsei Univ.)                 |
| 13:30-14:00     | Van der Waals Heterostructures for Orbital Gating in Photo-transistors and Electronic Spectroscopy | Heejun Yang (KAIST, Korea)                          |
| 14:00-14:30     | Graphenebased photonics for optical communications                                                 | Marco Romagnoli (CNIT, Italy)                       |
| 14:30-15:00     | Current Status and Challenges of hBN Growth by Chemical Vapor Deposition                           | Hyun Suk Shin (UNIST, Korea)                        |
| 15:00-15:30     | Engineering Grain Boundaries in 2D Materials for Emergent Properties                               | Cheol-Joo Kim (POSTECH, Korea)                      |
| 15:30-16:00     | EU-Graphene Workshop Planning Discussion                                                           |                                                     |
| Closing Remarks |                                                                                                    |                                                     |