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Developing New 2D Materials and Heterostructures for Printed Digital Devices

2D-PRINTABLE - Deliverable report

D8.1 – Project Management Plan

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Project Scientific Abstract

The 2D-PRINTABLE project aims to integrate sustainable large-scale liquid exfoliation techniques with theoretical modelling to efficiently produce a wide range of new 2D materials (2DMs), including conducting, semiconducting, and insulating nanosheets. The focus includes developing the printing and liquid phase deposition methods required to fabricate networks and multicomponent heterostructures, featuring layer-by-layer assembly of nanometer-thick 2DMs into ordered multilayers. The goal is to optimize these printed networks and heterostructures for digital systems, unlocking new properties and functionalities. The project also seeks to demonstrate various printed digital devices, including proof-of-principle, first-time demonstration of all-printed, all-nanosheet, heterostack light-emitting diodes (LEDs). In conclusion, 2D-PRINTABLE will prove 2D materials to be an indispensable material class in the field of printed electronics, capable of producing far-beyond-state-of-the-art devices that can act as a platform for the next generation of printed digital applications.

Public Summary

The Horizon Europe 2D-PRINTABLE project aims to unlock the full potential of 2D materials as an indispensable asset in the field of printed electronics. By employing sustainable and affordable techniques known as liquid exfoliation, the goal is to create more than 40 new 2D materials, guided by machine learning and AI methods. Moreover, the project will develop innovative printing and liquid deposition techniques to fabricate nanosheet networks and heterostructures with unique properties, facilitating the production of advanced printed digital devices. In particular, these novel materials will be integrated into printable 2D-based heterostructures specifically designed for digital technologies, which will serve as the foundation for a range of printed electronic devices, including transistors, solar cells, and LEDs, all of which will deliver exceptional performance.

To support the reaching of targets and achievements in terms of resources, quality, and impact of 2D-PRINTABLE, it is necessary to set up effective management tools ensuring a smooth and structured collaboration. The Management Plan is based on Annex I of the Grant agreement, the “Description of Action”, the Consortium Agreement, and further agreements proposed by the management team and discussed during the Kick-Off Meeting.
The deliverable has been designed to establish and provide guidelines for the daily activities and operations during the project. It covers a detailed explanation of project governance, meetings, the work plan, reporting, CSA alignment, communication and dissemination rules, and confidentiality. This project handbook is meant as the guide for the project and will therefore be reviewed and updated if deemed required with updated information in an appendix.

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Project partners:

#	Partner short name	Partner Full Name
1	TCD	TCD THE PROVOST, FELLOWS, FOUNDATION SCHOLARS & THE OTHER MEMBERS OF BOARD, OF THE COLLEGE OF THE HOLY & UNDIVIDED TRINITY OF QUEEN ELIZABETH NEAR DUBLIN
2	UNISTRA	UNIVERSITE DE STRASBOURG
3	UKa	UNIVERSITAET KASSEL
4	BED	BEDIMENSIONAL SPA
5	TUD	TECHNISCHE UNIVERSITAET DRESDEN
6	VSCHT	VYSOKA SKOLA CHEMICKO-TECHNOLOGICKA V PRAZE
7	UNR	UNIRESEARCH BV
8	UniBw M	UNIVERSITAET DER BUNDESWEHR MUENCHEN
9	EPFL	ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE

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