**Partner’s info collection form**

Call/topic: **HORIZON-WIDERA-2025-01-ACCESS-01**

Proposal acronym: **SMART**

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# Administrative Info

|  |  |
| --- | --- |
| **PIC[[1]](#footnote-1): 994789903** | **Legal Name of entity:**  Taras Shevchenko National University of Kyiv  **Acronym of legal entity:**  TSNUK |
| **Country:** Ukraine | **Official Logo (high resolution):** |

# Departments carrying out the proposed work

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *The information serves mainly statistical purposes. For determining the eligibility of the proposal, the official address of the organisation is taken into account.*  **Department 1** | | | | |  |
| Department name | Faculty of Physics | | | not applicable | |
|  | Same as organisation address | | |  | |
| Street | *64/13, Volodymyrska Street* | | |  | |
|  | | | | | |
| Town | *Kyiv* | | |  | |
|  | | | | | |
| Postcode | *01601* | |  | | |
|  | | | | | |
| Country | *Ukraine* | | |  | |
|  | | | | | |
| *Links with other participants*  *Please indicate if there are dependencies with other participants of the proposal.*  *Two participants (legal entities) are dependent on each other where there is a controlling relationship between them:*  *\* A legal entity is under the same direct or indirect control as another legal entity;or*  *\* A legal entity directly or indirectly controls another legal entity;or*  *\* A legal entity is directly or indirectly controlled by another legal entity.Control:*  *Legal entity A controls legal entity B if:*  *\* A, directly or indirectly, holds more than 50% of the nominal value of the issued share capital or a majority of the voting rights of the shareholders or associates of B, or*  *\* A, directly or indirectly, holds in fact or in law the decision-making powers in B.*  *The following relationships between legal entities shall not in themselves be deemed to constitute controlling relationships:*  *(a) the same public investment corporation, institutional investor or venture-capital company has a direct or indirect holding of more than 50 % of the nominal value of the issued share capital or a majority of voting rights of the shareholders or associates;*  *(b) the legal entities concerned are owned or supervised by the same public body.* | | | | | |  |
| ***Type of link*** | | ***Participant*** | | | |
| *[*Same group*]*  *[*Controls*]*  *[*Is controlled by*]* | |  | | | |

# Main contact person

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *It is the main scientist or team leader in charge of the proposal for the participant. For participant number 1 (the coordinator), this will be the person the EU services will contact concerning this proposal (e.g. for additional information, invitation to hearings, sending of evaluation results, convocation to negotiations). The data in blue is read-only. Details (name, first name and e-mail) of Main Contact persons should be edited in Step 4 of the Submission wizard.* | | | | | | | | | | | | | |
| Title: Prof. | |  | | Gender: | | | | Woman | Man | | | | Non binary |
|  | | | | | | | | | | | | | |
| First name: Oleh  E-mail: olegolikh@knu.ua | | | | | | Last name: Olikh | | | | | | | |
|  | | | | | | | | | | | | | |
| Position in org. | | Head of the general physics department | | | | | | | | | |  | |
|  | | | | | | | | | | | | | |
| Department | | Faculty of Physics | | | | | | | | | | Same as organisation | |
|  | | | Same as organisation address | | | | | | | |  | | |
| Street | | 64/13, Volodymyrska Street | | | | | | | | | |  | |
|  | | | | | | | | | | | | | |
| Town | | Kyiv | | | | | | Post code | 01601 | | |  | |
|  | | | | | | | | | | | | | |
| Country | | Ukraine | | | | | | | | | |  | |
|  | | | | | | | | | | | | | |
| Website | | https://www.phys.knu.ua/ | | | | | | | | | |  | |
|  | | | | | | | | | | | | | |
|  | Phone 1 | +380673169020 | | | Phone 2 | |  | | |  | |  | |
| *Other contact persons* | |  | | |  | |  | | |  | |  | |
| **First name** | | **Last name** | | | | | **e-mail** | | | | | **Phone** | |
| Serhiy | | Kondratenko | | | | | serhiy.v.kondratenko@gmail.com | | | | |  | |
|  | |  | | | | |  | | | | |  | |

# Researchers involved in the proposal

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Please, include also the main contact person, if a researcher*** | | | | | | | | | |
| **Title** | **First Name** | **Last Name** | **Gender** | **Nationality** | **E-mail** | **Career stage[[2]](#footnote-2)** | **Role of researcher (in the project)** | **Reference Identifier** | **Type of identifier** |
| Dr  Mr  Ms  Mrs  Prof | Oleh | Olikh | Woman  Man  Non-binary | Ukraine | olegolikh@knu.ua | Cat A  Cat B  Cat C  Cat D | Leading  Team member | 0000-0003-0633-5429 | ORCID  Researcher Id  Other - specify |
| Dr  Mr  Ms  Mrs  Prof | Serhiy | Kondratenko | Woman  Man  Non-binary | Ukraine | serhiy.v.kondratenko@gmail.com | Cat A  Cat B  Cat C  Cat D | Leading  Team member | 0000-0002-4403-7732 | ORCID  Researcher Id  Other - specify |
|  |  |  |  |  |  |  |  |  |  |

# Role of Participating organization in the project *(more than one options allowed)*:

|  |
| --- |
| Project management;  Communication, dissemination and engagement;  Provision of research and technology infrastructure;  Co-definition of research and market needs;  Civil society representative;  Policy maker or regulator, incl. standardization body;  Research performer;  Technology developer;  Testing/validation of approaches and ideas;  Prototyping and demonstration;  IPR management incl. technology transfer;  Public procurer of results;  Private buyer of results;  Finance provider (public or private);  Education and training;  Contributions from the social sciences or/and the humanities;  Other;  If other, please specify: (Maximum number of characters allowed: 50) |

# List of up to 5 publications, datasets, software, goods, services, or any other achievements relevant to the call content.

|  |  |
| --- | --- |
| **Type of achievement** | **Short Description (Max 500 characters)** |
| **[Publication]**  **[Dataset]**  **[Software]**  **[Good]**  **[Service]**  **[Other achievement]** | ***Key elements of the achievement, including a short qualitative assessment of its impact and (where available) its digital object identifier (DOI) or other type of persistent identifier (PID).***  ***Publications, in particular journal articles, are expected to be open access. Datasets are expected to be FAIR and ‘as open as possible, as closed as necessary’.*** |
| **[Publication]** | Olikh O., Zavhorodnii O. «Determination the iron concentration in silicon solar cells using photovoltaic parameters and machine learning», Solar Energy, 2025, Vol.300, 113754; <https://doi.org/10.1016/j.solener.2025.113754>  This study focuses on selecting an appropriate artificial intelligence algorithm and preprocessing method to achieve the most effective processing of experimental results. |
| **[Publication]** | Olikh O. , Lozitsky O., et al.«Estimation for iron contamination in Si solar cell by ideality factor: Deep neural network approach», Prog. Photovolt. Res. Appl., 2022, 30, p. 648; <https://doi.org/10.1002/pip.3539>  The paper demonstrates the successful application of deep neural networks to the analysis of experimental data in materials science, confirming the relevance of AI-based SMART approaches for processing measurement results from Dr. Vida Education across various scientific disciplines. |
| **[Publication]** | Olikh O., Datsenko O., Kondratenko S. «Influence of Illumination Spectrum on Dissociation Kinetics of Iron–Boron Pairs in Silicon», Physica Status Solidi (a), 2024, Vol.221, is.17, 2400351; <https://doi.org/10.1002/pssa.202400351>  The article illustrates the use of spectroscopic methods to investigate physicochemical processes in the solid state, in line with the SMART approach to training students in modern measurement techniques and data analysis with Dr. Vida Education. |
| **[Publication]** | S. Kondratenko et al. Photoconductivity of GeSn thin films with up to 15% Sn content. Physical Review Materials (2023), 7, 074604. <https://doi.org/10.1103/PhysRevMaterials.7.074604>  Investigations of photoconductivity in thin GeSn films demonstrate optical characterization methodologies that can be integrated into SMART educational experiments with Dr. Vida Education, familiarizing students with contemporary approaches to analyzing similar properties. |
| **[Publication]** | S. Kondratenko et al. Enhanced photoconductivity of hybrid 2D-QD MoS2-AgInS2 structures. Journal of Chemical Physics (2023), 159,044707.  <https://doi.org/10.1063/5.0148220>  This article highlights the enhanced photoconductivity of hybrid 2D–QD MoS₂–AgInS₂ structures, illustrating methods for integrating nanomaterials and optoelectronics into measurement techniques. It can serve as an educational example for SMART modules focused on optical characterization and data analysis. |

# List of up to 5 most relevant previous projects or activities, connected to the subject of this proposal

|  |  |
| --- | --- |
| **Name of the project or activity** | **Short Description (Max 500 characters)** |
| 2020-2021: project of National Research Foundation of Ukraine «Development of physical base of both acoustically controlled modification and machine learning-oriented characterization for silicon solar cells» (No 2020.02/0036) | The project integrates physical modification methods with contemporary characterization techniques for silicon solar cells, reflecting the SMART goals of implementing innovative measurement technologies and training students to work with experimental data. |
| 2024-2026: project of National Research Foundation of Ukraine «Development of principles for the creation and machine-oriented characterization of porous silicon nanostructures with optimal heat transport properties» (No 023.03/0252) | The project combines the fabrication of porous silicon nanostructures with optimized thermal conductivity and the application of machine learning for their design, in line with the SMART goals of integrating machine learning methods into experimental and educational practices. |
| 2021 – 2025: NATO Grant G5853 "Innovative Solar Cells"; funding source – NATO under the program "Science for Peace and Security." | The project on developing flexible CIGS-based photovoltaic devices in heterojunctions demonstrates contemporary approaches to the fabrication and characterization of solar cells, in line with the SMART goals of training students in optoelectronic measurement methods and materials analysis using Dr. Vida Education.. |
| 2020-2021: American-Ukrainian research project "GeSn alloys for improved current generation and charge carrier collection in tandem solar cell" grant FSA3-20-66707-0 from the U.S. Civilian Research and Development Foundation (CRDF Global) | The project experience with GeSn alloys for tandem photovoltaic devices illustrates how innovative materials and their characterization influence device efficiency. This approach aligns with SMART, enabling students to explore the relationship between material properties and the performance of sensor and optoelectronic systems. |

# Description of any significant infrastructure and/or any major items of technical equipment, relevant to the proposed work

|  |  |
| --- | --- |
| **Name of infrastructure or equipment** | **Short Description (Max 300 characters)** |
| Equipment for current-voltage, capacitance, and impedance measurements | The measurement equipment enables the investigation of conductivity, barrier properties, and dynamic processes in samples. Within the SMART framework, it can be used to teach methods of electrical characterization for sensors, photovoltaic devices, and biocompatible materials, followed by data analysis in Python and MATLAB. |
| Photoluminescence, photoconductivity and photovoltage spectroscopies facilities | Since the Dr. Vida Education device supports fluorescence and phosphorescence for molecular analysis, photoluminescence spectroscopy enables the investigation of these phenomena, which is essential for practical learning. Photoconductivity and photovoltaic spectroscopy allow examination of material properties related to electrical conduction under light exposure, aligning with the project’s educational objectives in physics and materials science. |
| Raman spectroscopy facilities | Raman spectroscopy enables detailed examination of the chemical composition of materials, which is valuable for practical classes in chemistry, biochemistry, and materials science. This technology allows students to analyze samples at the molecular level, supporting the project’s educational goal of replacing theoretical learning with hands-on experience. The equipment enhances the capabilities of the Dr. Vida Education device by providing tools for in-depth laboratory research. |
| AFM and Kelvin Probe Force Microscopy | This technology provides high-quality imaging of sample surfaces at the nanoscale, enabling the study of morphology, roughness, and other physical properties. This capability is crucial for materials science, a key focus of the project’s educational program. Students can observe the structure of materials used in Dr. Vida Education, gaining a deeper understanding of their characteristics and behavior. |
|  |  |

# Gender Equality Plan

**Does the organization have a Gender Equality Plan (GEP) covering the elements listed below?**

**Yes, https://senate.knu.ua/?p=2309**

**Minimum process-related requirements (building blocks) for a GEP**

**- Publication:** formal document published on the institution's website and signed by the top management

**- Dedicated resources:** commitment of human resources and gender expertise to implement it.

**- Data collection and monitoring:** sex/gender disaggregated data on personnel (and students for establishments concerned) and annual reporting based on indicators.

**- Training:** Awareness raising/trainings on gender equality and unconscious gender biases for staff and decision-makers.

**-** Content-wise, recommended areas to be covered and addressed via concrete measures and targets are:

**♦ work-life balance and organisational culture;**

**♦ gender balance in leadership and decision-making;**

**♦ gender equality in recruitment and career progression;**

**♦ integration of the gender dimension into research and teaching content;**

**♦ measures against gender-based violence including sexual harassment.**

# Involved Third Parties

|  |  |
| --- | --- |
| **Does the participant plan to subcontract**[[3]](#footnote-3) **certain tasks (please note that core tasks of the project should not be sub-contracted)** | **Y/N** |
| If **yes**, please describe and justify the tasks to be subcontracted. | |
| **Does the participant envisage that part of its work is performed by Affiliated Entities**[[4]](#footnote-4) (**Article 8 of the Corporate Model Grant Agreement)** | **N** |
| If **yes**, please describe the third party, the link of the participant to the third party, and describe and justify the foreseen tasks to be performed by the third party. | |
| **Does the participant envisage the use of contributions in kind provided by third parties**[[5]](#footnote-5) **(Articles 9.2 of the Corporate Model Grant Agreement)** | **N** |
| If **yes**, please describe the third party(ies) and its/ their contribution(s). | |
| **Does the participant envisage that part of the work is performed by Associated partners**[[6]](#footnote-6) **(Article 9.1 of the Corporate Model Grant Agreement)?** | **N** |
| If **yes**, please describe the Associated Partner(s) and their contributions | |
| **Does the participant envisage that part of the work is performed by international organisations**[[7]](#footnote-7) **(Article 10.2 of the Corporate Model Grant Agreement)?** | **N** |
| If **yes**, please describe the International Partner(s) and their contributions | |

1. A Participant Identification Code (PIC) is **a 9-digit number that serves as a unique identifier for legal entities participating in European funding programmes**. A PIC number has no expiry date. If your organization does not have a PIC, you can get it [**here**](https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/how-to-participate/participant-register). [↑](#footnote-ref-1)
2. Career stages as defined in Frascati 2015 manual:

   **Category A –** Top grade researcher: the single highest grade/post at which research is normally conducted. Example: ‘Full professor’ or ‘Director of research’.

   **Category B** – Senior researcher: Researchers working in positions not as senior as top position but more senior than newly qualified doctoral graduates (IsCED level 8). Examples: ‘associate professor’ or ‘senior researcher’ or ‘principal investigator’.

   **Category C –** Recognised researcher: the first grade/post into which a newly qualified doctoral graduate would normally be recruited. Examples: ‘assistant professor’, ‘investigator’ or ‘post-doctoral fellow’.

   **Category D –** First stage researcher: Either doctoral students at the IsCED level 8 who are engaged as researchers, or researchers working in posts that do not normally require a doctorate degree. Examples: ‘PhD students’ or ‘junior researchers’ (without a PhD). [↑](#footnote-ref-2)
3. Subcontractors may participate in the action, if necessary for the implementation. Subcontractors must implement their action tasks in accordance with Article 11. The costs for the subcontracted tasks (invoiced price from the subcontractor) are eligible and may be charged by the beneficiaries, under the conditions set out in Article 6. The costs will be included in Annex 2 as part of the beneficiaries’ costs. [↑](#footnote-ref-3)
4. Affiliated entities can charge costs and contributions to the action under the same conditions as the beneficiaries and must implement the action tasks attributed to them in Annex 1 in accordance with Article 11. Their costs and contributions will be included in Annex 2 and will be taken into account for the calculation of the grant. The beneficiaries must ensure that all their obligations under this Agreement also apply to their affiliated entities. The beneficiaries must ensure that the bodies mentioned in Article 25 (e.g. granting authority, OLAF, Court of Auditors (ECA), etc.) can exercise their rights also towards the affiliated entities. Breaches by affiliated entities will be handled in the same manner as breaches by beneficiaries. Recovery of undue amounts will be handled through the beneficiaries. If the granting authority requires joint and several liability of affiliated entities (see Data Sheet, Point 4.4), they must sign the declaration set out in Annex 3a and may be held liable in case of enforced recoveries against their beneficiaries (see Article 22.2 and 22.4). [↑](#footnote-ref-4)
5. Other third parties may give in-kind contributions to the action (i.e. personnel, equipment, other goods, works and services, etc. which are free-of-charge), if necessary for the implementation. Third parties giving in-kind contributions do not implement any action tasks. They may not charge costs or contributions to the action and the costs for the in-kind contributions are not eligible. [↑](#footnote-ref-5)
6. Associated partners must implement the action tasks attributed to them in Annex 1 in accordance with Article 11. They may not charge costs or contributions to the action and the costs for their tasks are not eligible. [↑](#footnote-ref-6)
7. Participants which are established in a non-EU country [↑](#footnote-ref-7)