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| ***Brief description of the organisation: National Institute of Chemistry (NIC), Slovenia PIC: 998756718*** |
| National Institute of Chemistry (NIC) is a research institution with track record in scientific excellence and breakthrough research located in Slovenia, Europe. With our cutting-edge research, we are enriching the global treasury of knowledge by solving the most pressing challenges facing society including health, bioinspired technology, sustainable energy, climate change, circular economy and safe food. Basic and applied research are focused towards fields that are of long-term importance to both Slovenia and the world: biotechnology, structural biology, synthetic biology, environmental protection, experimental and theoretical chemistry, analytical chemistry, materials research, and chemical engineering, through which the Institute performs a world class fundamental research and transfers the technology applications. Institute hosts 5 ERC projects (3 AdG, 1 StG and 1 PoC project) as the most prestigious EU grants.Our research goals push the boundaries of science and create new value. We successfully transfer knowledge to industry and, in the long-term, support the role of science in the prosperity and development of society. We enable scientific excellence through collaboration with the best global research institutions, groups and individuals. We are members of international multidisciplinary research networks, such as CERIC-ERIC, SUSCHEM, EMIRI, EERA Bioenergy, Fuel Cells and Hydrogen Joint Undertaking, Vision 2020, Slovenian Strategic Research and Innovation Partnership (SRIP), Centre of Excellence for Low-Carbon Technologies, Slovenian Business and Research Association. We aim to provide the stimulating environment and open learning space where our ~100 early stage researchers can develop their curiosity and realise their creativity to their PhD thesis. By doing so, we ensure future generations build on the experience of established researchers. NIC has 350 employees, of which around 280 carry out research work in 9 departments & 2 infrastructure centres. Relatively small size make the institute agile and closely connected. We provide our employees with excellent working conditions in which they can carry out their professional mission. We are proud that our interpersonal relationships are based on an open, integrated, equitable and inclusive culture not limited by gender or race. We strive to motivate excellent Slovenian scientists to return from abroad and recruit talents from around the world. With our mission, we aim to contribute to the well-being of society and as an example of scientific excellence.NIC’s employees publish more than 200 scientific papers per year and are strongly involved in international projects (in 2019, NIC published 260 papers with an average IF 5.89, where the average of the top 10 publications in 2019 was as high as 16.2). Research is oriented towards the development of new technologies and products, which will help to ensure the long-term development of Slovenia, and which are internationally relevant. National Institute of Chemistry one of the leading Slovenian organisations for graduate-level education and training. Industry is an important partner of the Institute in these endeavours. There is a number of Slovenian companies that have close long-term cooperation with the Institute, as well as with a number of innovative international companies from pharma to nanomaterials. This kind of cooperation accounts for the 20% of the income of the Institute. NIC is also a constituting member of several excellence and competence centres, such as the Centres of Excellence ENFIST, Polymers and Low-Carbon Technologies. The work of the Institute aligns with the priority thematic areas of the EU Framework Programme for Research and Innovation, Horizon Europe, NIC participates in R&D&I programmes, both national and European, since FP6. In Horizon 2020, we have cooperated in 45 projects, and also in 5 ERA-NET, 4 INTERREG, 2 EIT Climate KIC, 3 NATO-SPS. In Horizon 2020 only, NIC obtained 19 million EUR grants which puts it on the 3rd place in Slovenia and on the first place when normalized to size.In the last three years NIC submitted more than 40 patent applications, which places NIC at the top of Slovenian organisations. The institute has a well-established support system for EU and other international projects; Technology Transfer Office guides researchers through IPR issues, the Project Management Office offers researchers assistance and professional support in project proposal preparation and project implementation. The institute has a sound and transparent financial management of the running projects. |

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| ***NIC projects*** |
| * **MaCChines** - Molecular machines based on coiled-coil protein origami (ERC Advanced grant 2017) (2018-2023)
* **RNPdynamics** - Multivalent interactions driving RNP dynamics in development and disease (ERC Advanced grant 2018) (2020-2025)
* **MULTraSonicA** - Multiscale modeling and simulation approaches for biomedical ultrasonic applications (ERC Advanced grant 2019) (2021-2026)
* **CCedit** - Coiled-coil mediated exonuclease tethering technology for the enhancement of CRISPR gene editing **(**ERC Proof of concept 2019)(2020-2021)
* **123STABLE -** Towards Nanostructured Electrocatalysts with Superior Stability (ERC Starting Grant 2019) (2020-2024)
* **VIROFIGHT –** General-purpose virus-neutralizing engulfing shells with modular tatrget-specificity (H2020-FETOPEN-2018-2019-2020-01) (2020-2024)
* **BIG-MAP** - Battery Interface Genome - Materials Acceleration Platform (H2020-LC-BAT-2020-3) (2020-2023)
* **FRIENDSHIP** – Forthcoming Research and Industry for European and National Development of SHIP (H2020-LC-SC3-2019-NZE-RES-CC) (2020-2024)
* **NAIMA -** Na ion materials as essential components to manufacture robust battery cells for non-automotive applications (2019-2023)
* **BIOSPRINT**, Improve Biorefinery operations through process intensification and new end-products (H2020-BBI-JTI-2019) (2020-2024)
* **POLYSTORAGE -** European Training Network In Innovative Polymers For Next-Generation Electrochemical Energy Storage (H2020-MSCA-ITN-2019) (2019-2023)
* **BATTERY 2030 -** BATTERY 2030+ At the heart of a connected green society (H2020-FETPROACT-2019-01) (2019-2020)
* **LimnoPlast** - Microplastics in Europe's freshwater ecosystems: From sources to solutions (H2020-MSCA-ITN-2019) (2019-2023)
* **POLYNSPIRE -** Demonstration of Innovative Technologies towards a more Efficient and Sustainable Plastic Recycling (H2020-NMBP-SPIRE-2018) (2018-2022)
* **ReaxPro -** Software Platform for Multiscale Modelling of Reactive Materials and Processes (DT-NMBP-09-2018) (2019-2023)
* **BIZEOLCAT-** Bifunctional Zeolite based Catalysts and Innovative process for Sustainable Hydrocarbon Transformation (CE-NMBP-24-2018) (2019-2022)
* **CONVERGE**, Carbon Valorisation in Energy-efficient Green fuels (H2020-LC-SC3-2018) (2018-2022)
* **Centre of Excellence Low Carbon Technologies**; funded by European Regional Development Fund, 2009 - 2013 total amount granted: 10 million Euro; 7 million dedicated to catalyst research
* **PLOTINA -** Promoting gender balance and inclusion in research, innovation and training(2016-2020)
* Coordinator of the ERANET SynBio project **Bioorigami on designed bionanomaterials** (2015-2017) with partners from the USA (University of California LA, University of Washington), the UK (University of Oxford, University of Bristol) and Germany (TU Munich).
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| ***Equipment*** |
| The Institute offers the state-of-the-art equipment in several research topics, allowing researchers to engage in the cutting-edge research challenges at the global level. Some equipment infrastructure is the only one of its kind in Slovenia (newly acquired 200 kV Cryo-electronic microscope put in operation in early September 2019), while AR-TEM microscope (used in material science projects) and NMR spectrometer are the two largest single investments in a research equipment piece in the region of South-East Europe. Local computing centre. National Institute of Chemistry hosts Ažman Computing Centre (ARC). As part of the Institute’s research infrastructure, ARC includes computer clusters containing about 5000 cores, 6 TB RAM, 400 TB storage and featuring performance of about 32 teraflops. In the framework of the proposed research, ARC facilitates seamless and immediate testing of the developed code. NIC is the funding member of the organization SLING (Slovenian Supercomputing Association), who will run European funded supercomputer centre HPC RIVR. |