**PROPOSAL FOR MEDTECH MTC PROGRAMMATIC SEED GRANT 2024**

Please use Font: Arial 10 pt, Single spacing for your text

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| **SECTION** | **DESCRIPTION** |
| **I.** | **DESCRIPTIVE TITLE**  |
| **II.** | **DETAILS OF TEAM MEMBERS (LEAD PI, TEAM PI(S), CO-I(S) AND COLLABORATOR(S))** |
| **III.** | **OVERVIEW OF PROPOSED PROGRAMME** |
| **IV.** | **KEY OBJECTIVES AND DESCRIPTION OF PROPOSED PROGRAMME** |
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| **X.** | **REVIEWERS** |
| **XI.** | **DECLARATION FROM LEAD PI, TEAM PI(S) AND CO-I(S)** |
| **XII.** | **DECLARATION FROM HEAD(S) OF HOST INSTITUTION(S)** |

**Declaration:**

Indicate ‘**Yes**’ if current submission is being used for other submissions. Indicate ‘**No**’ if no other versions of this proposal (or parts thereof) with similar objectives, scope, deliverables or outcomes have been or will be submitted to any other funding bodies.

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|[ ]  Yes |[ ]  No |

Additionally, if ‘**Yes**’, please indicate where the proposal has been or will be submitted to.

**Important:**

**All information is treated in confidence and used only for the purposes of the grant.**

**Note to applicants:**

* Applicants are required to submit their applications electronically *via* iGrants to the “MedTech MTC Programmatic Seed Grant” between **14 June 2024** and **26 July 2024, 1700 hrs**.
* All sections should be completed. All text should be in single spacing Arial font, 10 pt.
* Applications should be submitted in **pdf** format.
* More details on the grant call can be found in the **MedTech MTC Programmatic Seed Grant – Information Sheet**, which can be downloaded from https://www.a-star.edu.sg/Research/funding-opportunities/mtc-medtech-psg
1. **DESCRIPTIVE TITLE**
* Please provide the proposed title of the proposed programme.
1. **DETAILS OF TEAM MEMBERS (Lead PI, Team PIs, CO-Is and Collaborators)**
	* Please Insert details of each team member in the table below. If required, please insert additional rows.
* The Lead PI will be the overall lead in the conduct of the Research from the Host Institution. Lead PI will be responsible for coordinating research activities carried by research team and all progress reporting of the programme, on behalf of the research team.
* The Team PI(s) will be the representative leading the conduct of the Research at the Partner Institution.
* The Co-I(s) will be the Research personnel identified as Co-Investigators from either the Host or Partner Institution.
* Collaborator(s) refers to any company, institution, incorporated body or other industry or academic collaborator, who are engaged in the research in collaboration with the Lead PI, Team PIs or Co-Is.

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| **Lead PI:**Overall Lead from Host Institution(Title, name and research institution, email address and contact no.)  |  |
| **Team PI(s):**Representative from Partner Institution(s)(Title, name and research institution, email address and contact no.)  |  |
| **CO- I(s):**Other researchers from Host and Partner Institutions(Title, name and research institution, email address and contact no.)  |  |
| **COLLABORATOR:**(Title, name and affiliation, email address and contact no.)  |  |

1. **OVERVIEW OF PROPOSED PROGRAMME**
* Please select the theme(s) for your proposal below. For the selected theme(s), please indicate the scope of your proposal by checking the relevant box(es) under the chosen theme(s).

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| **Thematic #1: Sensor Development & Miniaturization – Novel Biochemical Sensors for Non-invasive POCT** | **Thematic #2: Resilient & Sustainable MedTech Manufacturing** |
| Sample Collection  |[ ]  Material Selection and Critical Supplies |[ ]
| Sample Processing |[ ]  Net-Zero Emissions |[ ]
| Sample Detection |[ ]  Excessive & Hazardous MedicalWaste Management |[ ]
| Form factor miniaturization |[ ]  Design for Retrofitting/Reprocessing |[ ]
| Others, please specify: \_\_\_\_\_\_\_\_\_ |[ ]  Others, please specify: \_\_\_\_\_\_\_\_\_ |[ ]

* Please provide an abstract of the i) Unmet Need, ii) Current Standard of Care/Competitive Landscape, iii) Proposed Solution and iv) Proposed Project Development Plan & Indicative Budget (max 1 page).
1. **KEY OBJECTIVES AND DESCRIPTION OF PROPOSED PROGRAMME**
* Provide a detailed description of the following (max 5 pages):
	+ Background and unmet need
		- Describe the background and the significance of the unmet need.
		- Describe the current approaches and their shortcomings.
		- Who are the target patients/customers?
	+ Description and Impact of the Technology.
		- Describe the proposed Technology, how it works and the expected improvements from existing solutions.
		- Detail any preliminary studies you have undertaken of the Technology.
		- Why is the Technology the best solution for the need?
		- How does the Technology fit into the current workflow and practices?
		- How will the Technology reduce healthcare system costs or improve sustainability and resiliency?
	+ Uniqueness & Competitive Analysis of Solution
		- Identify competing technologies/comparators and how this Technology is superior.
		- Outline the differentiating factor(s) of the Technology and the reason that industry would find the Technology attractive.
	+ Detail the Technology Development Plan
		- Aims of Project: List the key objectives of the proposed project plan.
		- Provide a system architecture of the proposed solution and the areas to be developed under this project application. Please provide start- and end- Technology Readiness Level for each component, module, and/or system to be developed.
		- Describe in detail the proposed project development plan for the solution under this funding specifically detailing the work breakdown structure (WBS), go/no-go milestones with corresponding quantitative acceptance criteria in relation to the objectives/requirements specifications and deliverables (further summarize in section VIII)
		- Highlight key challenges/risks and the proposed mitigation plan.
	+ Intellectual Property Management
		- Provide details of the relevant Background IP for the Technology.
		- Briefly describe any Foreground IP likely to be generated from the project.
	+ Implementation Plan
		- Describe the plans for collaboration and agreements that need to be put in place in achieving the proposed research objectives.
		- Briefly articulate the proposed technology development roadmap/approach of the platform technology to be developed and the commercialisation plan of the first clinical/application use case i.e. regulatory, potential business model.
		- Highlight and list potential industry partner(s) for licensing and/or co-development etc.
	+ Significance and Potential Impact of Programme
		- Articulate how the proposed solution will provide positive benefits to the MedTech industry in Singapore
			* Potential to address unmet healthcare and industry needs
			* Technology differentiation and competitiveness at regional or global level
			* Support MedTech manufacturing value creation and value capture activities in Singapore
			* Potential for industry development and economic impact
1. **BUDGET REQUEST**
2. **Overall budget**
* Please indicate the overall funding required including the breakdown on budget requirement for manpower, consumables and equipment in the excel spreadsheet provided below. The following guidelines are to be used in the computation of the budgets:
* **Manpower (EOM):**
	+ Funding of EOM should comply with the Host Institution(s)’s prevailing and consistently applied human resource guidelines.
	+ Effective 1 Apr 2023, A\*STAR PIs and Co-Is are no longer allowed to charge their EOM to the project.
* **Overseas Travel:**
* Travel costs should only be used for purposes specific to this programme.



1. **DECLARATION OF ETHICS APPROVAL**
* The approval of the grant is subject to ethics approval. Please state if your study involves the following ethics categories and attach the ethics approval documentation, if applicable.

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| **Ethics Category** | **Involve?***(Y/N)* | **Please declare the participating institutions where study requiring ethics approval is conducted** |
| Human Subject |  |  |
| Use of Human Tissues or Cells from Primary Donors (i.e. subject / volunteers recruited for project) |  |  |
| Use of Commercially Available Human/Animal Tissues or Cells |  |  |
| Animal Experimentation |  |  |
| Requirement for Containment |  |  |
| Multi-centre Trial(s)(if yes, please state all participating institutions / centres: \_\_\_\_\_\_\_\_) |  |  |

1. **MILESTONES AND DELIVERABLES**
* Clearly state **project objectives** and propose **quantifiable project deliverables and acceptance criteria** that the programme aims to achieve within the period of funding.
	+ ***Specific to Thematic #1, team must be able to demonstrate quantifiable advantage in relevant parameters such as:***
		- ***Rapid sample to result***
		- ***Ability to test multiple analytes simultaneously***
		- ***Analytes have scientifically validated relevance to disease(s) and/or co-morbidities***
		- ***Clinically relevant resolution and accuracy (sensitivity and specificity)***
		- ***High reproducibility***
	+ ***Specific to Thematic #2, team must demonstrate significant advantage (not just equivalent to current/emerging technologies) over current gold standard or standard of practice***
* Propose detailed and quantifiable scientific milestones for the programme. These will be used to assess the progress of the programme, which will be taken into consideration for continued disbursement of funds.
* PI to report outcomes during quarterly reviews and final report.
	+ PI should additionally propose plans to proceed to a full programmatic during the mid-term review.

 *\*Shaded box represents end date. Please refer to “milestone and benchmark setting” guideline on the website*

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| **Research****Milestones/****Deliverables (include quantifiable metrics)** | **M1** | **M2** | **M3** | **M4** | **M5** | **M6** | **M7** | **M8** | **M9** | **M10** | **M11** | **M12** |
| **Objective 1***Example: Faster sample-to-result* |  |  |  |  |  |  |  |  |  |  |  |  |
| **Milestone 1.1****(Start date)** |  |  |  |  |  |  |  |  |  |  |  |  |
| **Deliverable 1.1****(Start date)***Example: Achieve 40% time-savings compared to current sample-to-result SOPs* |  |  |  |  |  |  |  |  |  |  |  |  |
| **Milestone 1.2****(Start date)** |  |  |  |  |  |  |  |  |  |  |  |  |
| **Deliverable 1.2****(Start date)** |  |  |  |  |  |  |  |  |  |  |  |  |
| **Objective 2** |  |  |  |  |  |  |  |  |  |  |  |  |
| **Etc** |  |  |  |  |  |  |  |  |  |  |  |  |

1. **OTHER FUNDING SUPPORT**

**Support from any industry partner(s), if applicable**

* Provide details on the funding or other resources provided by any participating industry partner(s), where applicable, for this programme.

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| --- | --- | --- | --- |
| **Items Supported** | **Funding Source** | **Amount of Fund ($)** | **Support Period (Year)** |
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**Grant Support**

* List all currently held or pending grants by the team member(s) that are related to this programme. These include those supported by / applied to A\*STAR, NMRC, Universities and/or other public funding agencies. Please also provide a 1-line description of the project and where applicable, explain how the scope of research under each grant is different and/or related to this project application.

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| --- | --- | --- | --- | --- |
| **Title of Research, 1-line description and brief explanation on the difference in scope** | **Funding Agency** | **Amount of Fund** | **Support Period (Year)** | **Expiry Date of the grant** |
| **Approved/ Received ($)** | **Balance Available ($)** |
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* Please declare that we (the applicants) do not have any conflict of interest with the industry partners (company(s) and company executives) as listed in this proposal.
1. **CURRICULUM VITAE**

In no more than 2 pages per PI / Co-I, please **provide only the following required information** in the following format:

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| --- | --- |
| Salutation & Name |  |
| Current Appointment(s) & Institution Affliation(s) | (Please provide full details, e.g. joint appointments; other academic appointments including those outside of Singapore) |
| Percentage of time spent every year | Public Institution 1: X%Public Institution 2: Y%Overseas Appointment: Z%(where X+Y+Z = 100%) |
| Latest publications in the area described in this project (list up to 10) | 1. Author; Title; Journal/Publication; Volume/Page/Date
2. Author; Title; Journal/Publication; Volume/Page/Date
3. Author; Title; Journal/Publication; Volume/Page/Date
4. Author; Title; Journal/Publication; Volume/Page/Date
5. Author; Title; Journal/Publication; Volume/Page/Date
6. Author; Title; Journal/Publication; Volume/Page/Date
7. Author; Title; Journal/Publication; Volume/Page/Date
8. Author; Title; Journal/Publication; Volume/Page/Date
9. Author; Title; Journal/Publication; Volume/Page/Date
10. Author; Title; Journal/Publication; Volume/Page/Date
 |
| Other key research achievements (e.g. patents, licenses, awards, spin-off companies, external consultancy etc.) |  |
| Research background and technical competencies that are relevant to the programme |  |

1. **REVIEWERS**
	1. **Suggested reviewers**

Please suggest **at least 5 international technical reviewers** who may be suitable to review the proposed project. Kindly state the relationship of the suggested reviewers to the PI(s), Co-I(s) and Industry Collaborators. Note that reviewers must not have any conflict of interest with or involvement (direct and indirect) in the proposed project. Reviewers who are co-authors with the PI(s) in any publications should not be included as well. A\*STAR has the final decision on the selection of reviewers for the evaluation of the proposal.

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| 1. | Name |  |
| Institute/ Organization  |  |
| Research Area |  |
| Email  |  |
| Website |  |
| Relationship to PI(s) and/or Co-I(s)/Collaborator |  |
|  |
| 2. | Name |  |
| Institute/ Organization  |  |
| Research Area |  |
| Email  |  |
| Website |  |
| Relationship to PI(s) and/or Co-I(s)/ Collaborator |  |
|  |
| 3. | Name |  |
| Institute/ Organization  |  |
| Research Area |  |
| Email  |  |
| Website |  |
| Relationship to PI(s) and/or Co-I(s) Collaborator |  |
|  |
| 4. | Name |  |
| Institute/ Organization  |  |
| Research Area |  |
| Email  |  |
| Website |  |
| Relationship to PI(s) and/or Co-I(s) Collaborator |  |
|  |
| 5. | Name |  |
| Institute/ Organization  |  |
| Research Area |  |
| Email  |  |
| Website |  |
| Relationship to PI(s) and/or Co-I(s) Collaborator |  |
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* 1. **conflict of interest (COI)**

Please provide the name and contact information of individuals who may not be suitable to review the proposal, this includes potential competitors who may be in the same area of research.

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| 1. | Name |  |
| Institute/ Organization  |  |
| Research Area |  |
| Email  |  |
| Website |  |
| Reason for COI |  |
|  |
| 2. | Name |  |
| Institute/ Organization  |  |
| Research Area |  |
| Email  |  |
| Website |  |
| Reason for COI |  |
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1. **DECLARATION FROM LEAD PI, TEAM PI(S) AND CO-I(S)**

I, the undersigned, declare that:

1. all information is accurate and to the best of my knowledge; and
2. similar versions or part(s) of this proposal have not been sent to other agencies for funding.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Lead PI, Team PI(s) and Co-I(s) Signature, Name and Date

*Please duplicate as needed*

1. **DECLARATION FROM HEAD(S) OF HOST INSTITUTION(S)**

It is certified that:

the Institution agrees to participate in this programme;

the Institution shall provide necessary facilities for implementing the programme; and

the Institution assumes financial and other management responsibilities for the duration of the programme to be carried out at their institution.

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Head of Host Institution Signature, Name and Date

*Please duplicate as needed*