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**SFS R&D PROGRAMME JOINTLY LED BY SFA AND A\*STAR**

**PROPOSAL FOR INDUSTRY ALIGNMENT FUND (PRE-POSITIONING)**

**(FOR HHP & MTC DOMAIN)**

**IMPLEMENTING AGENCY – A\*STAR**

Please do not exceed 10 pages. Sections I and II may be excluded from the page count, while Sections III, X, XI, XII and XIII may be included as Annexes.

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

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| **SECTION** | **DESCRIPTION** |
| **I.** | **DESCRIPTIVE TITLE AND EXECUTIVE SUMMARY**  |
| **II.** | **DETAILS OF TEAM MEMBERS (CORRESPONDING PIs, CO-Is AND COLLABORATORS)** |
| **III.** | **REPORT FOR PREVIOUS PHASE OF IAF FUNDING (IF APPLICABLE)**  |
| **IV.** | **KEY OBJECTIVES AND DESCRIPTION OF PROPOSED PROGRAMME** |
| **V.** | **SIGNIFICANCE AND POTENTIAL IMPACT OF PROGRAMME** |
| **VI.** | **IMPLEMENTATION PLAN**  |
| **VII.** | **BUDGET REQUEST**  |
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| **X.** | **OTHER FUNDING SUPPORT** |
| **XI.** | **CURRICULUM VITAE** |
| **XII.** | **SIGNATURE(S) OF THE PROGRAMME LEAD(S)** |
| **XIII.** | **DECLARATION FROM THE HEAD(S) OF THE HOST INSTITUTION(S)** |

Kindly submit application to:

a-star\_SFSRND@hq.a-star.edu.sg

**Important:**

**Relevant privileged or confidential information should be disclosed to help convey a better understanding of the project. Such information should be clearly marked in the proposal.**

1. **DESCRIPTIVE TITLE AND EXECUTIVE SUMMARY**
* Proposed title of IAF programme.
* Executive Summary: List specific aims, hypotheses, methodology, potential applications/exploitations, transformative/differentiation/game-changing factors, budget needs and funding period.
* Articulate economic value capture pathway and industry development outcomes

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1. **DETAILS OF TEAM MEMBERS (CORRESPONDING PIs, CO-Is AND COLLABORATORS)**
	* The Corresponding PI’s role will be to coordinate research activities carried by research team. He/She will be responsible for all progress reporting of the platform, on behalf of the research team.
	* The Co-I(s) will be the person(s) leading and managing a particular aspect of the collaborative effort.
	* Collaborator(s) refers to any company, institution, incorporated body or other industry or academic collaborator, who are engaged in the research in collaboration with Corresponding PIs or Co-Is and their institution
	* Please note that grant funding will be awarded to Singapore public sector research performers only. Collaborators do not receive grant funding.
	* If required, please insert additional boxes below.

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| **CORRESPONDING PI**(Title, name and research institution, email address and contact no.)  | \*Please include only one lead-PI / one host-institution per project. Host institution is to be the lead-PI’s resident institution. |
| **CO- I:**(Title, name and research institution, email address and contact no.)  |  |
| **COLLABORATOR :**(Title, name and affiliation, email address and contact no.)  |  |

1. **REPORT FOR PREVIOUS FUNDING (IF APPLICABLE)**
* Please provide a short summary of the programme to date as an Annex to the proposal.
* Elaborate on the milestones achieved, commercialization outcomes, industry collaboration projects, industry funding received and total research investment (TRI) in Singapore as achieved by the programme.
* Include a summary of the budget awarded, and the utilization (to date).

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1. **KEY OBJECTIVES AND DESCRIPTION OF PROPOSED PROGRAMME**
* List key objectives
* Describe:
	+ hypotheses and methodology
	+ the innovative concepts or approaches, and how the proposed R&D approach will achieve the stated objectives
	+ how the approach differentiates and sets it apart from others in the same field

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1. **SIGNIFICANCE AND POTENTIAL IMPACT OF PROGRAMME**
* In the field of the proposed programme, kindly:
	+ Address the global competitive landscape, and explain how the programme will set Singapore apart from competitors.
	+ Provide an assessment of the local landscape in Singapore e.g. how it synergizes and brings together similar capabilities and/or develop new capabilities.
* Where applicable, highlight how this proposed programme would:
	+ Develop new product(s) or service(s), or improve existing practices in the health, biomedical, medical technology, food or consumer care industry
	+ Catalyse development of leading edge technology to raise the competitiveness of companies and impact industry in Singapore
	+ Create internationally competitive Singapore initiatives
	+ Have the potential to scale up or to cut across different industry sectors
	+ Engage potential industry partners to establish R&D collaborations or consortia within 3-5 years for technology transfer
	+ Have the potential for wider adoption across different industry clusters
	+ Anchor or grow longer-term industry investments in Singapore
* Describe the economic value capture pathway and key industry development outcomes of the proposed programme using one or more of the following constructs:
	+ Attract new R&D investments to Singapore by international and/or local companies (name company, where applicable)
	+ New product(s), improved processes/yield/productivity, or service(s) that could arise
	+ Create new industry segment and businesses, create high quality jobs, or drive top line growth for companies in Singapore

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1. **IMPLEMENTATION PLAN**
* Briefly describe team member(s)’ contribution to the programme and the plans for interaction among the team member(s) in achieving the research objectives.
* Please identify a commercialization lead within the team or within the one of the host institutions’ IEOs / TTOs, who would be responsible for driving the industry engagement plan.
* Please outline the industry engagement plan for your programme, including the following considerations where applicable:
	+ Specified target industry partners and potential collaboration models for each partner
	+ Well-articulated commercialisable service / product and revenue model
	+ New business / start-up and business model
* The following items **must** also be incorporated in their proposal template:
	+ Food regulatory compliance strategy
		- Food sold in Singapore must meet the chemical and microbiological requirements, labelling requirements specified under the Singapore Food Regulations. A copy of the Food Regulations may be downloaded from the SFA’s [website](https://www.sfa.gov.sg/legislation) (select “Sale of Food Act (Chapter 283)”, then click on “Food Regulations”).
		- Submissions should demonstrate awareness of regulatory requirements and include plans for compliance with food safety regulatory requirements.
		- For submissions involving novel foods, submissions should include and articulate details on how the safety assessment of the novel food will be conducted by the researchers and the specific management strategies at each stage of product development and commercialisation.
			* These include hazard identification, characterisation, exposure assessment and risk characterisation. Please also consider the [SFA’s requirements for safety assessment of novel foods](https://www.sfa.gov.sg/docs/default-source/food-import-and-export/Requirements-on-safety-assessment-of-novel-foods_23-Nov-2020.pdf) in conducting your risk assessments.
	+ Sustainability of Production
		- Include sustainability considerations to ensure that technologies and/or products developed are sustainable based on the following factors:
			* Reduction of greenhouse gas emissions
			* Increasing energy and/or resource efficiency
			* Sustainable waste management practices towards circular economy
	+ Industry Engagement Strategy and Articulation of Commercialisation/Business Development plans
		- Identify the end product, process, solution or system that is to be commercialized;
		- Identify market potential and business opportunities for the end product, process or system and plans on how to take advantage of them to build food security for Singapore;
		- Identify potential pitfalls and risk mitigation strategies;
		- Analyse the intellectual property landscape to identify competitive strengths of the expected research outcomes and how they should be protected;
		- Outline possible business models and roadmap to commercialisation against the current competitive landscape; and
		- Consider “Build vs. Buy approach” in achieving your strategic R&D outcomes.
	+ Host Institution’s Business Development Plan Experience
		- Include any previous experience of the institutions’s BD Team to conduct market analysis and risk assessment;
		- Engage relevant potential industry partners;
		- Deliver business plans efficiently; and
		- Carry the product, process or solution from development to commercialisation.

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| Host Institution’s Business Development Team Composition |
| Name | Designation | Years of Experience |
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* Applicants are asked to include at least 3 letters of support from potential industry collaborators, and/or VCs (to be provided in the Annex).

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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 table provided below. **Please also replicate the table for further breakdown according to each investigator involved in the programme.** The following guidelines are to be used in the computation of the budgets.
* **Manpower (EOM):**

Please consult your respective HR.

* **Other Operating Expenses (OOE):**

Total OOE/FTE/year:

* **Overseas Travel/Conferences (OT):**

Travel cost should only be used for purposes specific to this programme.

* Overheads should be budgeted in as required by the respective institutions, capped at 20% of direct research costs.

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| Manpower (EOM) | **Qualifications** | **No.** | Year 1($) | Year 2($) | Year 3($) | Total ($) |
| *Postdoctoral Fellow* |  |  |  |  |  |  |
| *Research Assistant* |  |  |  |  |  |  |
| *Laboratory Technician* |  |  |  |  |  |  |
| *Others* *(Pls specify)* |  |  |  |  |  |  |
| EOM Subtotal |  |  |  |  |
| Equipment (please list) | No. | Year 1($) | Year 2($) | Year 3($) | Total ($) |
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| Equipment Subtotal |  |  |  |  |
| Other Operating Expenses (OOE) |  | Year 1($) | Year 2($) | Year 3($) | Total ($) |
| Materials & Consumables |  |  |  |  |
| Animal Cost (if applicable) |  |  |  |  |
| Others (pls state) |  |  |  |  |
| OOE Subtotal |  |  |  |  |
| Overseas Travel/Conferences (OT) | Year 1($) | Year 2($) | Year 3($) | Total ($) |
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| OT Subtotal |  |  |  |  |
| Total (Direct costs) |  |  |  |  |
| Overheads costs (20% of direct costs) |  |  |  |  |
| GRAND TOTAL |  |  |  |  |

\*Please input all figures to the nearest hundreds.

1. **Justifications (where relevant):**
* **Animal Cost**

Please provide a breakdown on the proposed animal cost e.g. number of mice and/or cages.

* **Equipment**

For each piece of equipment ≥ SGD 100,000, please justify the proposed purchase.

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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** |
| Animal Experimentation |  |  |

1. **MILESTONES AND KPIs**
* Please propose the number of industry collaborations, amount of investment from industry, industry cash funding received, and the number of industry RSE jobs created that can be expected within 3-5 years of the programme in the table below:

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| **KPI Indicators** | **Mid-Term Review Tracking Indicator** | **Projected KPIs** |
| Number of R&D projects with industry - identify company(s) where applicable |  |  |
| Total investments from Industry (Cash and In-Kind) to fund R&D projects  |  |  |
| Industry cash funding received (from private sector industry sources) |  |  |
| Number of industry RSE jobs created |  |  |
| Targeted Industry Research Spending (1: 0.5-0.75 gearing ratio) |  |  |

* Please feel free to add on and propose additional KPI indicators relevant for the programme (e.g. Number of publications, Number of TDs/patents/technologies deployed/licenses, Number of new/improved products/processes from R&D)
* Propose detailed scientific milestones for the programme. These will be used to assess the progress of the study. The progress of the programme will be taken into consideration for continued disbursements of funds.

*\*Please use shading for the time points*

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| **Research****Milestones/****Deliverables** | **Year 1** | **Year 2** | **Year 3** |
| **Q1** | **Q2** | **Q3** | **Q4** | **Q1** | **Q2** | **Q3** | **Q4** | **Q1** | **Q2** | **Q3** | **Q4** |
| **Milestone 1** |  |  |  |  |  |  |  |  |  |  |  |  |
| **Milestone 2** |  |  |  |  |  |  |  |  |  |  |  |  |
| **Etc.** |  |  |  |  |  |  |  |  |  |  |  |  |
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1. **OTHER FUNDING SUPPORT**
* Please provide the following details on the grants currently held or being applied for by the team member(s) that is related to this IAF-PP programme.

**Support from any industry partner(s)**

* Provide details on the funding or other resources provided by any participating industry partner(s), where applicable, for this IAF-PP 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 applied grants by the team member(s) related to this IAF-PP programme. These include those supported by / applied to A\*STAR, NMRC, Universities and other public funding agencies. Kindly attach the scientific abstract of each grant listed below for reference. Please also provide a brief explanation on how the scope of research under each grant (including this IAF-PP application) is different/ relates to one another.

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| **Title of Research** | **Funding Agency** | **Amount of Fund** | **Support Period (Year)** | **Expiry Date of the grant** |
| **Approved/ Received ($)** | **Balance Available ($)** |
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1. **CURRICULUM VITAE**

In no more than 1 page per PI(s) / Co-I(s), please provide the following information:

* Name and affiliation
* Latest publications in the area described in this IAF-PP programme (list up to 10)
* Other key research achievements (e.g. patents, licenses, awards, spin-off companies, external consultancy etc.)

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1. **DECLARATION FROM THE CORRESPONDING PI(S)**

I, the undersigned, declare that:

1. that 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;
3. I agree to abide by the conditions governing the award of research grants set out by the IAF-PP Implementing Agency.

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Corresponding PI(s) Signature, Name and Date

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Co-investigator(s) Signature, Name and Date

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

It is certified that:

the Institution agrees to participate in this IAF-PP Programme;

the Institution shall provide necessary facilities for implementing the IAF-PP Programme;

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

the back-up funding for manpower, consumables, etc. is available for this IAF-PP Programme.

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Head of the Institution Signature, Name and Date

**ANNEX A: PEER REVIEWERS**

1. Each application may include at least three recommendations of peer reviewers who could potentially be contacted to evaluate the proposal.
2. The following information regarding the recommendation should be provided:
3. Salutation/ First Name/ Last Name
4. Institution/ Designation
5. Email
6. Professional affiliation
7. Expertise/Research Interests
8. In providing the recommendations, the applicant certifies that the recommended reviewers:
9. are experts in the subject matter capable of offering unbiased opinions on the scientific merits of the proposed project;
10. have breadth and depth of knowledge of the field to evaluate the broader, multi-disciplinary, societal and educational impact of the proposed project;
11. have good knowledge of global developments in the field to evaluate the relevancy and competitiveness of the proposed project;
12. declare any relationship, direct or otherwise, with the applicant (e.g. thesis advisor or advisee, current or recent (within the past 24 months) research collaborator, past-colleagues, acquaintance, etc.); and
13. have no financial interest in the proposed project.
14. Please identify individuals that you would like to exclude from the review of your proposal.