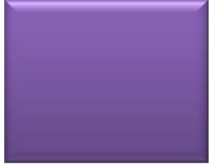




FUNDAMENTAL RESEARCH GRANT SCHEME PROPOSAL (FRGS) : DO & DON'T

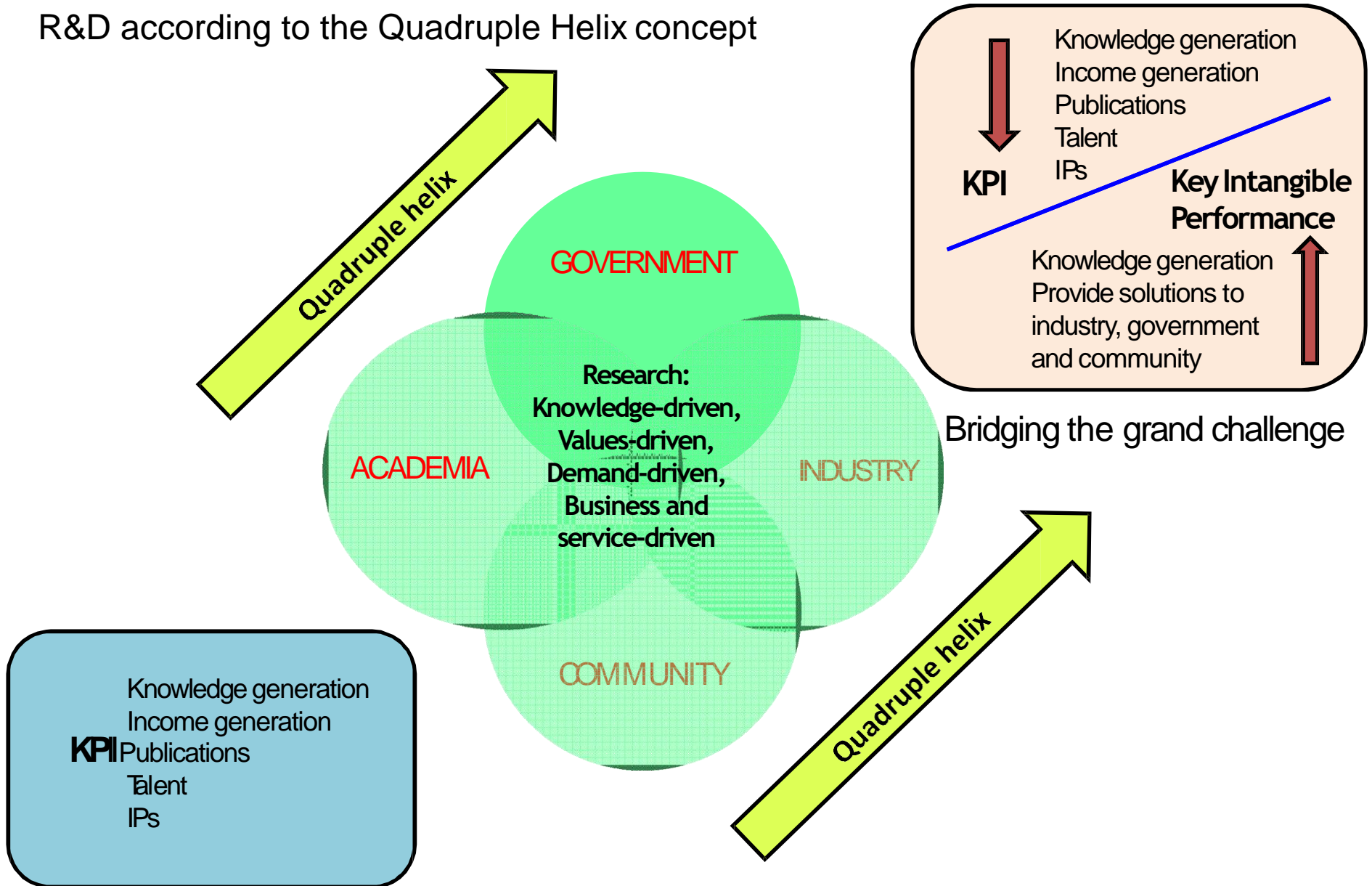
**CHE HASSAN CHE HARON
UKM**



OVERVIEW

Big Picture

R&D according to the Quadruple Helix concept



Big Picture

Moving forward in 11TH MP

11th Malaysian Plan (2016- 2020)

People based
growth

- Market/Demand Driven R&D
- Values Driven R&D
- Service Driven R&D



Malaysian Higher Education Blueprint (2015-2025)

1. Holistic, entrepreneurial
and balanced graduates

2. Talent excellence

3. Lifelong learners

4. Quality TVET graduates

5. Financial sustainability

6. Empowered governance

7. Innovation ecosystem

8. Global prominence

9. Globalised online learning

10. Transformed higher
education delivery



Game changers

Prominent researchers
undertaking impactful
researches

Institution Based Consortiums
for Excellence in Research
Innovation to enhance
Inclusivity, Sustainability and
Shared Equity

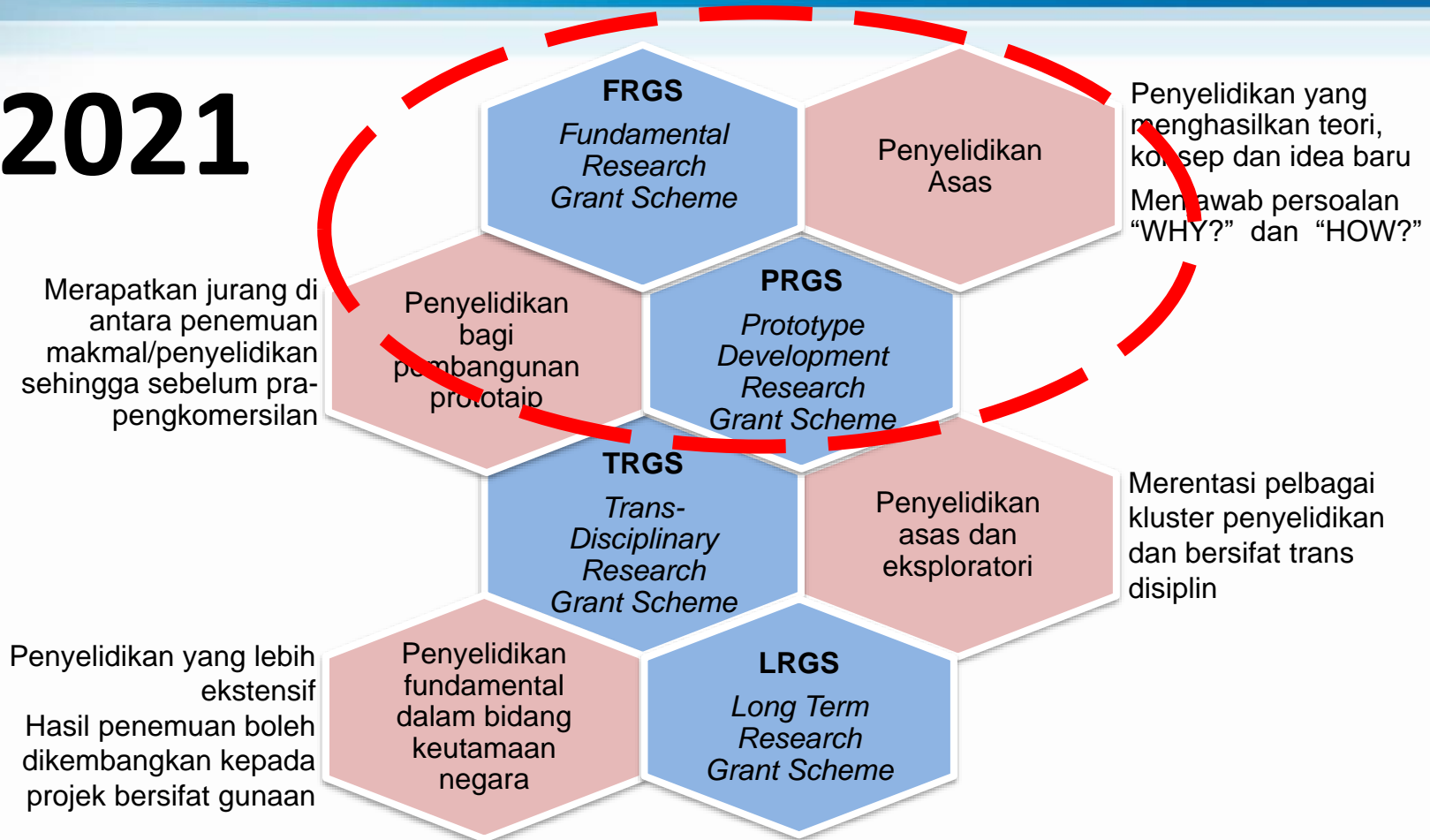
Globally recognised Niche
areas

Decision Support System
(Big Data)



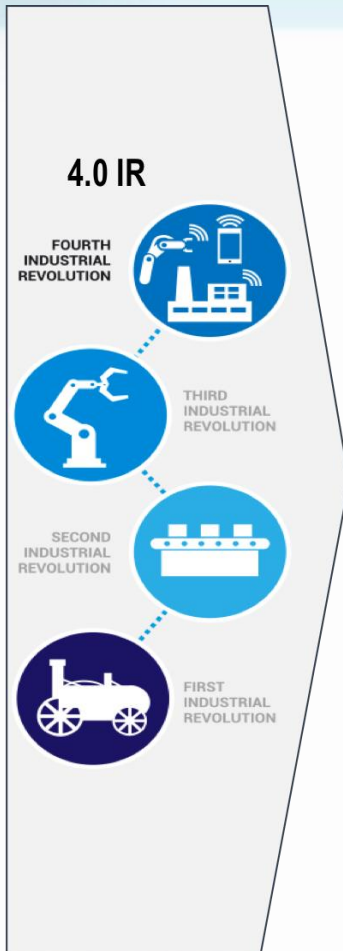
SKIM GERAN PENYELIDIKAN SEDIA ADA : KPM

2021





KLUSTER & BIDANG KEUTAMAAN PENYELIDIKAN TAHUN 2018



Sektor Keutamaan Negara <i>National Priority Areas</i> (NPAs)	Kluster Dana Penyelidikan KPM (FRGS, PRGS, TRGS)						
<i>Food Security</i>	Pure and Applied Science	Technology & Engineering	Social Science	Information & Communication	Clinical & Health Science	Arts & Applied Arts	Natural and Cultural Heritage
<i>Energy Security</i>							
<i>Plantation Crops</i>							
<i>Cyber Security</i>							
<i>Water Security</i>							
<i>Bio Diversity</i>							
<i>Healthcare and Medicine</i>							
<i>Environment & Climate Change</i>							
<i>Transportation & Mobility</i>							

Bidang Keutamaan Penyelidikan Tahun 2018:

- Penjagaan Kesihatan dan Kesejahteraan (*Healthcare & Wellness*)
- Teknologi Disruptif/Termaju (*Disruptive/Advanced Technology*)
- Impak Sosial 4.0 IR (*Societal Impact of 4.0 IR*)



PEMETAAN KEPADA BIDANG KEUTAMAAN NEGARA TAHUN 2019

National Priority Areas (NPAs)	Research Cluster KPM 2019 - 2020	Research Domains DP KPM 2019 - 2020						
Food Security	Social & Economic Wellbeing	Pure and Applied Science	Technology & Engineering	Social Science	Information & Communication Technology	Clinical & Health Science	Arts & Applied Arts	Natural and Cultural Heritage
Energy Security	Food Safety & Security							
Plantation Crops	Infrastructure							
Cyber Security	Climate Change & Environment							
Water Security	Health							
Biodiversity	Education & Knowledgeable civil society							
Healthcare & Medicine	National Security							
Environment & Climate Change	Frontier Technologies & Advanced Manufacturing							
Transportation & Mobility								



MOVING FORWARD

Precouncil Hala Tuju DP KPM (14 Ogos 2018)

EXISTING SCHEMES

- 1 Fundamental
- 2 Prototype Development
- 3 Transdisciplinary
- 4 Long Term

Current implementation



Bottom up proposals



Centralised evaluation at JPT level



Broad & general research areas



KPI based

MOVING FORWARD

DP KPM 2.0

Existing schemes with revised implementation:

Request for proposal for large funding schemes

(TRGS & LRGS) based on areas of national/regional importance

Institution-based funding for exploratory research

with specific TOR & SOP

Research Deliverables

- Measuring impact
- Deliverables



GARIS PANDUAN (PINDAAN TAHUN 2021)



KEMENTERIAN
PENDIDIKAN
MALAYSIA

JPT | JABATAN
PENDIDIKAN
TINGGI

Garis Panduan ini perlulah dirujuk bersekali dengan Dokumen Tadbir Urus Dana Penyelidikan KPT



+



+



Tempoh penyelidikan:
Dua (2) tahun atau tiga (3) tahun sahaja.

Siling Peruntukan:
Tidak melebihi RM250,000.00



www.mygrants.gov.my

Perlu mematuhi perkara-perkara yang telah dinyatakan dalam "Malaysia Code of Responsible Conduct in Research" (MCRCR) seperti di pautan <http://www.might.org.my/download/the-malaysian-code-of-responsible-conduct-in-research/>.

DOMAIN PENYELIDIKAN FRGS

PERMOHONAN FRGS

Berdasarkan

Tujuh (7) Domain Penelitian

Domain Penelitian (Research Domains)
Dana Penelitian KPM

Pure and Applied Science

Technology & Engineering

Social Science

Information & Communication
Technology

Clinical & Health Science

Arts & Applied Arts

Natural and Cultural Heritage

Kluster
Penyelidikan KPT

Rangka Kerja
10-10
(MySTIE)

Wawasan
Kemakmuran
Bersama 2030

SDGs –
Sustainable
Development
Goals

WAY FORWARD (2020)

SUSTAINABLE DEVELOPMENT GOALS



***SDGs came into effect in January 2016, and will continue to guide United Nations Development Programme policy and funding until 2030*

RESEARCH CLUSTER 2020

1



JAMINAN DAN
KESELAMATAN
MAKANAN

2



INFRASTRUKTUR ASAS

3



PERUBAHAN IKLIM DAN
ALAM SEKITAR

4



KESIHATAN

5



PENDIDIKAN DAN
MASYARAKAT MADANI
CELIK ILMU

6



KESELAMATAN
NASIONAL

7



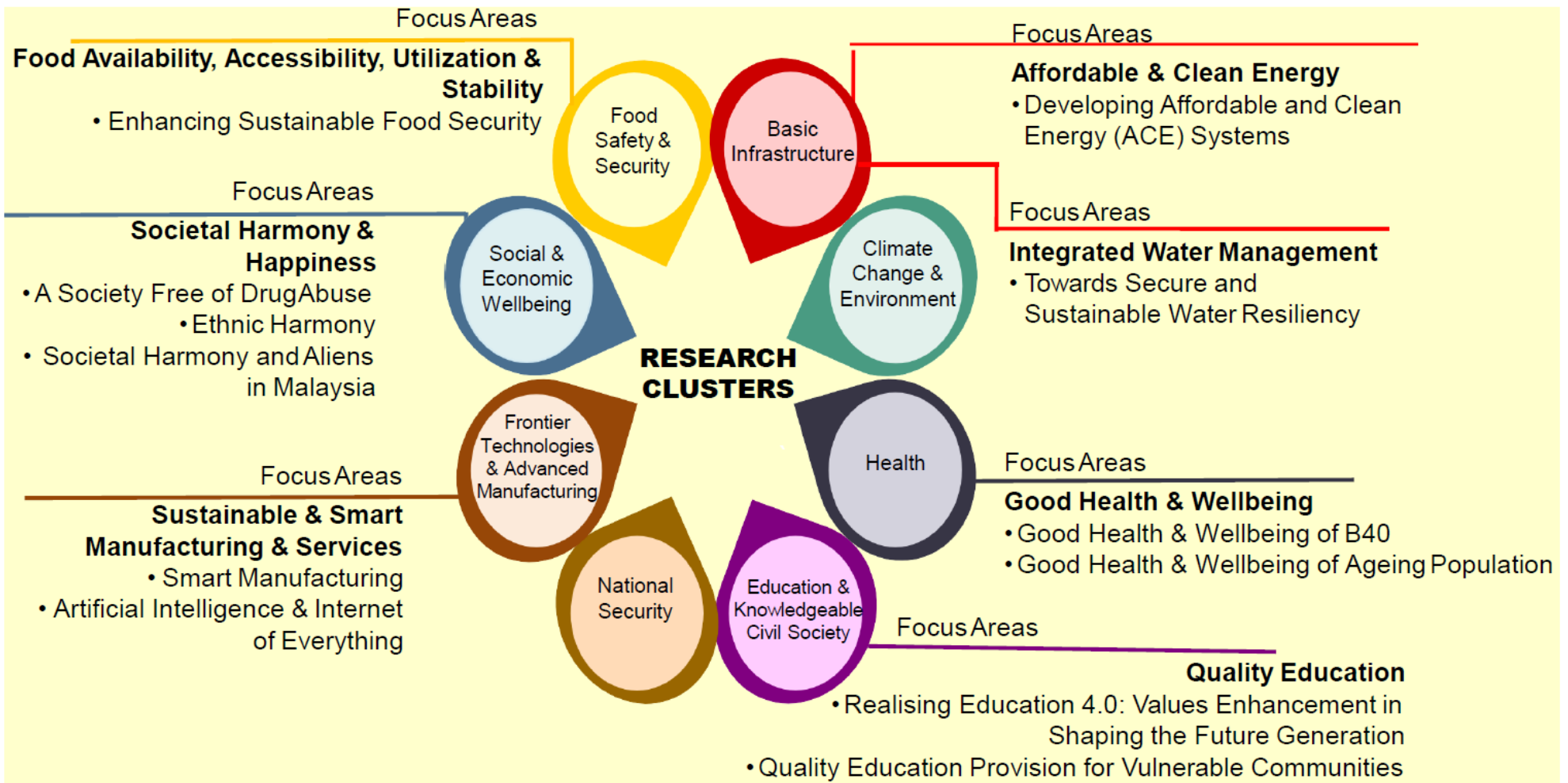
TEKNOLOGI
TERKEHADAPAN DAN
PEMBUATAN TERMAJU

8



KESEJAHTERAAN
SOSIAL DAN EKONOMI

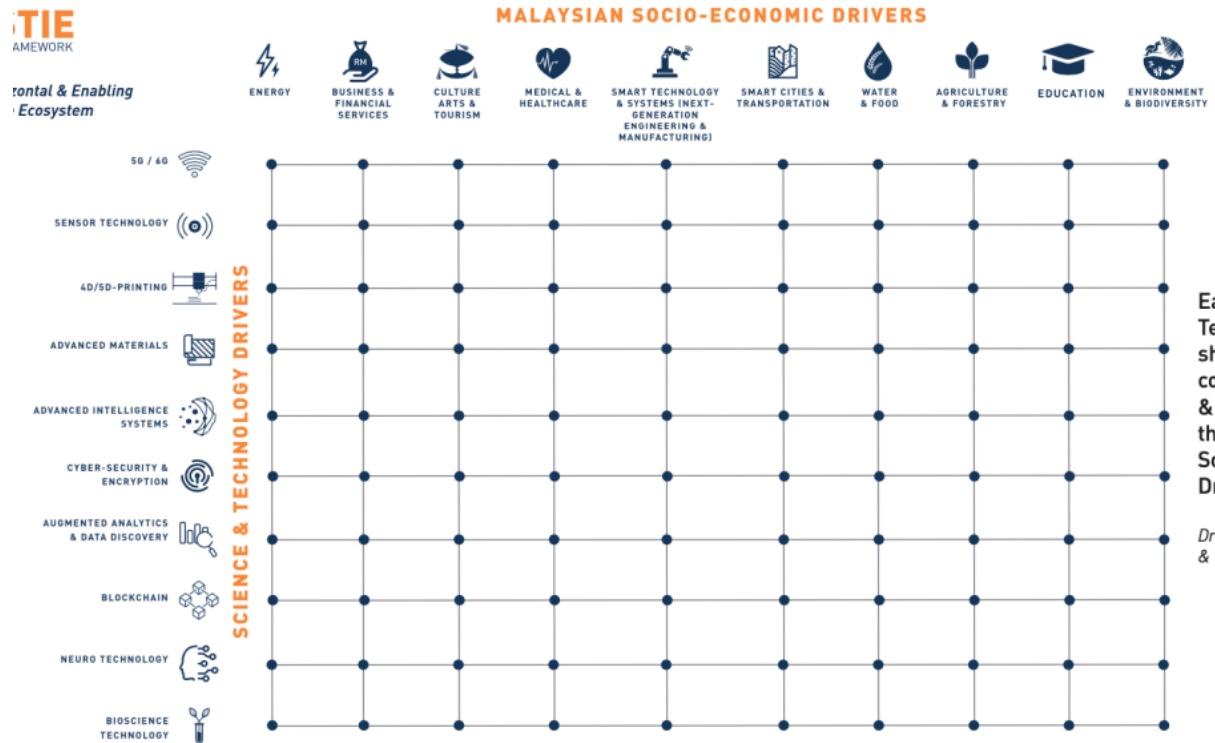
RESEARCH CLUSTER 2020



Proposal Must Be Mapped to:



- ❑ **10-10 Malaysian Science, Technology, Innovation and Economy (MySTIE) – based on 10 Socio-Economic Drivers**
- ❑ **Shared Prosperity Vision 2030 (SPV 2030)**
- ❑ **Sustainable Development Goal (SDGs)**



Each Malaysian Socio-economic Driver should explore how the 10 Science & Technology Drivers will value-add and enhance their global competitiveness

Each Science & Technology Drive should explore core technologies & applications for the 10 Malaysian Socio-economic Drivers

Driving Fundamental & Translational Research

10 SOCIO-ECONOMIC DRIVERS



KEMENTERIAN SAINS,
TEKNOLOGI DAN INOVASI
MINISTRY OF SCIENCE, TECHNOLOGY AND INNOVATION

MALAYSIA

GRAND CHALLENGE

**SMART CITIES AND
TRANSPORTATIONS**



SMART TECHNOLOGY & SYSTEM
(NEXT GENERATION ENGINEERING & MANUFACTURING)

MEDICAL AND HEALTHCARE



**BUSINESS AND FINANCIAL
SERVICES**

AGRICULTURE AND FORESTRY



WATER AND FOOD

EDUCATION



ENERGY

CULTURE, ARTS AND TOURISM



ENVIRONMENT & BIODIVERSITY



<https://edana.mosti.gov.my>

Proposal Must Be Mapped to:

2021

PROPOSED 15 KEY ECONOMIC GROWTH ACTIVITIES (KEGA)

- ❑ **10-10 Malaysian Science, Technology, Innovation and Economy (MySTIE) – based on 10 Socio-Economic Drivers**
- ❑ **Shared Prosperity Vision 2030 (SPV 2030)**
- ❑ **Sustainable Development Goal (SDGs)**



KEGA 1:
Islamic Finance Hub 2.0



KEGA 2:
Digital Economy



KEGA 3:
Fourth Industrial Revolution (4IR)



KEGA 4:
Content Industry



KEGA 5:
ASEAN Hub



KEGA 6:
Halal & Food Hub



KEGA 7:
Malaysia Commodities 2.0



KEGA 8:
Logistic, Transportation & Sustainable Mobility



KEGA 9:
Coastal & Maritime Economy



KEGA 10:
Centres of Excellence



KEGA 11:
Renewable Energy



KEGA 12:
Green Economy



KEGA 13:
Smart & High Value Agriculture



KEGA 14:
Advanced & Modern Services



KEGA 15:
Tourism: Malaysia Truly Asia

**SDGs came into effect in January 2016, and will continue to guide United Nations Development Programme policy and funding until 2030

NEW FRGS FORM

Application > Edit Application Submission
16
21 d

Application Details | Project Leader | **Research Info.** | Equipment & Material | Budget | Add. Info. | Declaration | Appendix | Form Subm

C. Research Information

C(i). Research Domain* +

Research Domain	Sub Research Domain
-----------------	---------------------

C(ii). Research Cluster

Cluster:*

C(iii). 10-10 Malaysia Science, Technology, Innovation and Economy (MySTIE) - based on 10 Socio-Economic Drivers

MySTIE:*

C(iv). Shared Prosperity Vision 2030 (SPV 2030)

SPV:*

C(v). Sustainable Development Goals (SDGs)

SDG:*

C(vi). Location of Research

C(vii). Duration of this research *This application must start at 1st of July 2021. Please do not change to another date*

Taskbar: 12:41 AM 26/1/2021

What is FRGS..

❑ FRGS is a fundamental or Pure research

❑ *fundamental* research is driven by a scientist's *curiosity* or interest in a scientific question.

❑ The main motivation is to *expand man's knowledge* , not to create or invent something.

❑ There is no obvious commercial value to the discoveries that result from basic research.

❑ Research that answer

❑ 'WHY' and 'HOW'

❑ to explore the 'SCIENCE' of the research

❑ The research should focus on:

❑ accumulation of theories

❑ fundamental structures

❑ fundamental processes

Initial message....

Successful Proposal Messaging

- It's not about who researchers are...
- It's about **what researchers do**

- It's not about what researchers need...
- It's about **what need researchers serve**

- It's not about researchers background and history...
- It's about **researchers vision and future**

Initial message....

Successful Proposal Messaging



A Fundable Idea

Addresses the funder's target audience/group

Advances the funder's agenda and builds on the funder's giving history or portfolio

Should be replicable and sustainable

Aligns with funder priorities

Builds or expands on something of value and has potential for impact beyond as single organization or group of people

Measures/analyzes learning, growth and movement toward a goal

Writing a Winning Basic Research Proposal

The purpose of a grant proposal is to persuade a funding source to fund a project. The decision maker must be convinced that

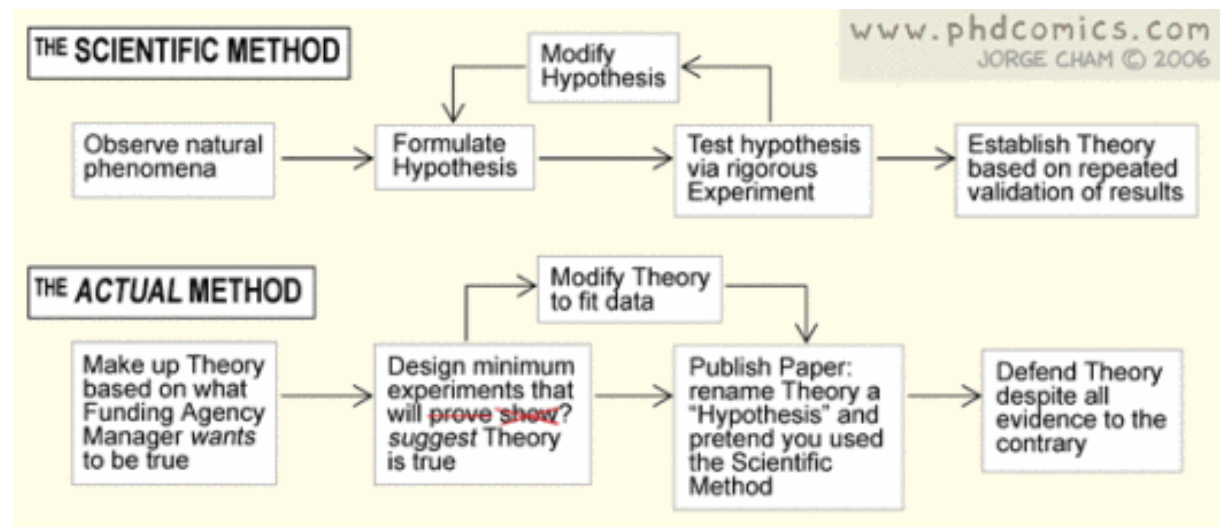
- objectives of the proposal are worthwhile
- goal is relevant to the funding agency's mission
- research approach is sound
- researchers are capable of doing the proposed work
- adequate facilities are available
- the requested amount of funding is reasonable

Evaluation: INTERNAL Evaluator

- Internal evaluation
 - Department/Faculty/Institute level
 - University level

Internal evaluators improve the quality of grant submissions

How to
"improve"



Assessment: External Assessor

□ Sponsor level

- Many constraints
- Number of proposals, amount of money available, etc.
- To find mistakes/weaknesses, etc. (**QUALITY...QUALITY**)
- To find ways on...
- How to “**reject**” or **select the best...**

HISTORY

2016: Total Application: 4,486 (RM651mil) Technology and Engineering Cluster: 1,319

2017: Total Application: 6000+ (1912)

2018: Total Application: 7000+ (2197)



Grant Application

- Most common reasons for to reject the proposal
 1. Not new or lack of original ideas
 2. Diffuse, superficial or **unfocused research plan**
 3. **Lack of knowledge** of published relevant work
 4. **Lack of experience** in the essential methodology
 5. Uncertainty concerning the future directions
 6. **Questionable reasoning** in experimental approach
 7. **Unacceptable** scientific rationale
 8. **Unrealistically** large amount of work
 9. **Insufficient** experimental detail
 10. **Uncritical approach**



Grant Application

□ Quality of the Proposal

□ The measures for a good quality proposal are:

- Informative **title**;
- Convincing **executive summary**;
- Clear **problem statement and objective**;
- Scientific **background** and rationale;
- Good selection of **research methods**;
- **Ethical** considerations; and
- **Realistic budget** and schedule.



Evaluation: Process

□ Research Proposal VS Research evaluation

Module of FRGS/TRGS Proposal

Title
Details of Researcher
Research Information
Executive Summary
Research Background
 Problem Statement
 Hypotheses
 Literature Review
Research Objectives
Methodology/Research Design
Timeline/Schedule
Expected Results
Facilities and Special Resources
Budget
Resume/Brief CV
Appendices

What Ext. Evaluators Look For:

Title (1)
Details of Researcher
Research Information
Executive Summary (2)
Research Background
 Problem Statement (3)
 Hypotheses
 Literature Review
Research Objectives (4)
Methodology/Research Design (5)
Timeline/Schedule
Expected Results (6)
Facilities and Special Resources
Budget (7)
Resume/Brief CV
Appendices

Evaluation: Title

A good title should:

- Indicate the **type of study**.
- Address the **main problem**.
- Be **concise, short, and descriptive**.
- Convey to the evaluator the main focus of the research.
- Use the **correct terms** in the title.
- Should be **intelligible to non-specialists**.
- Limit the title to a **single sentence**.
- **Relevant in 2 years time?**

Evaluation: Executive Summary

An informative abstract, giving evaluators the chance to grasp the essentials of the proposal without having to read the details

- Research background/introduction
- **Research Problem,**
- Objectives
- **Methods** and Rationale
- **Expected output.**, significance of output



RESEARCH BACKGROUND

- Elaboration of title
- Clarity of problem statement and research question/hypothesis/theoretical framework (if applicable)
- Cited most recent (last 5 years) related references
- In line with government policy, national agenda and global aspiration (can be at local, national or world level)

References - Most recent

- Up-to-date
- Highly relevant with the problem
- Original source
 - **First Order** : High Impact Journals and Books
 - **Second Order** : Indexed Proceeding Publications
 - **Third Order** : Reputable Technical Report

Evaluation: Objectives

Objectives specify the outcome of the project, the end product(s). We must state the objectives clearly and keep them "S-M-A-R-T" or "S-I-M-P-L-E."

- **Specific** - what we intend to change through their project.
- **Immediate**-time frame during which a current problem will be addressed.
- **Measurable**-what we would accept as proof of project success.
- **Practical** - how each objective is a real solution to a real problem.
- **Logical** - how each objective can contribute to achieving our overall goal(s).
- **Evaluable** - how much change has to occur for the project to be effective.

Evaluation: Methodology

Basically, we must provide answers to the following questions:

- What **activities need** to take place in order to meet the objectives?
- What are the **start and finish dates** for the activities?
- Who has **responsibility** for completing each activity?
- How will participants be selected? (**Check...!?**)
- What **factors determine the suitability** of GWs methodology?
- Does this project build on **models** already in existence? if not, how is it superior?
- What **facilities and equipment** will be required to conduct the activities?

□ Milestones

- The milestones are the results which the project seeks to achieve.
- The milestones should, as much as possible **relate to 'tangible products'** (quantifiable, qualitative or verifiable) from conduct of the research.
- They **indicate viable achievements.**
- **NORMALLY ONE FOR EVERY 6 MTHS**

Gantt's Chart /Flow Chart

- must clearly show the **research activities and milestones** (•/M)
- Reflection of the **project objectives, methodologies, outputs, etc.**
- Very important

Evaluation: Expect Output

What are the expected outcomes and what do We wish to achieve, e.g.:

- A new theory
- A prototype
- A new model
- An artefact
- A new plant process
- A solution to a practical problem
- A specific aid to practitioners in a particular field
- An instrument of use in the manufacturing industry, etc.

Evaluation: Track Record

Track Record (CV)


Experience, Qualifications and Availability of Research Team

This section should begin with the principal investigator, and then provide similar information on all individuals involved with the project.

Professional research competence (relevant research experience, the highest academic degree).



Quality of Proposal

- Meticulous
 - Proper use of language (grammar, spelling, sentence construction)
 - Good formatting and presentation
- 

Evaluation: Elements of FRGS

Novelty, Cutting Edge, High Impact

- Does the research use **novel techniques**, process, and procedures?
- Is **new data** required?
- Is data gathered in a **new way**?
- Is the proposed research **potentially patentable** and publishable?

Evaluation: Budget

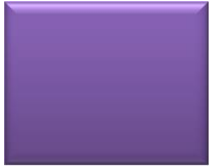
Budget: Evaluators must ensure that...

- Present the budget based on the sponsor requests. (**Read Guideline**)
- The budget must be reasonable, acceptable, and appropriate (**DO not inflate...**)
- must follow strictly the Guidelines
- Detail justifications on each item must be provided (**Vote 35000**)
- Itemized Budget

Evaluation: Facility and Support

Infrastructure/Facilities

- GWs must use **whatever available** in campus (related to proposed project)
- Reduce to a minimum any call upon outside facilities and expertise
- The requirements of infra will vary from study to study. **GWs must carefully list the relevant facilities and resources that will be used.**
- The costs for such facility use should be **detailed in GWs budget.**



ASSESSMENT FORM



SKALA PEMARKAHAN TAHUN 2020/2021

DANA PENYELIDIKAN, KEMENTERIAN PENDIDIKAN MALAYSIA

Skala Pemarkahan ini melibatkan setiap KRITERIA PENILAIAN yang telah ditetapkan



Sekiranya markah yang diberikan bagi salah satu kriteria penilaian **< DARIPADA 5**, perakuan projek secara automatic akan menjadi "Not Recommended"

KRITERIA PENILAIAN & PEMARKAHAN TAHUN 2020/2021

FRGS (Skim Geran Penyelidikan Fundamental)

FRGS				
EVALUATION FORM FUNDAMENTAL RESEARCH GRANT SCHEME (FRGS) (VER. 1/2020)				
SUMMARY OF ASSESSMENT				
Very Poor 1-2	Poor 3-4	Acceptable 5-6	Good 7-8	Very Good 9-10
NO.	ASSESSMENT CRITERIA	SCORE (1-10)	ACTUAL SCORE	(COMPULSORY IF SCORE GIVEN ARE LOWER THAN 5 FROM EACH ASSESSMENT CRITERIA)
1.	Title* (5%) Specific in nature reflecting fundamental issues to be resolved/novelty Brief and reflects the content of the proposal			
2.	Executive Summary* (10%) Problem statement Objectives Methodology Expected output/outcome/implication Significance of output			
3.	Research Background* (15%) Elaboration of title Clarity of problem statement and research question/hypothesis/theoretical framework (if applicable) Cited most recent (last 5 years) related references In line with government policy, national agenda and global aspiration (can help alleviate problem at local, national or world level)			
4.	Objectives* (15%) Specific, Measurable, Achievable, Realistic and within Time-frame (SMART) Relate to problem statement/research question			
5.	Methodology* (25%) Clear and detailed description of methodology (may consist of field work, sampling techniques, interview session, analysis, lab work of different phases, experimental protocol, statistical analysis)			

Disediakan oleh: BKPI JPT KPM

1

OBJECTIVES

2

TITLE

3

EXECUTIVE SUMMARY RESEARCH

4

BACKGROUND

5

METHODOLOGY

6

EXPECTED RESULT

7

TRACK RECORD & COMPOSITION OF TEAM

8

QUALITY OF PROPOSAL

9

ELEMENT OF FRGS CRITERIA

SUMBER: SESI TAKLIMAT GARIS PANDUAN DANA PENYELIDIKAN KEMENTERIAN MALAYSIA SIRI 1 TAHUN 2020, 4-6 FEBRUARI 2020, DEWAN ZA'BA KEMENTERIAN PENDIDIKAN MALAYSIA



ASSESSMENT FORM

DULU

Assessment Criteria	✓	✗	Comment - A must for (X) Overall
Title	✓		
Specific in nature reflecting fundamental issues to be resolved/novelty	✓		Tajuk lebih kepada 'applied research'
Brief and reflects the content of the proposal	✓		
Executive Summary	✓		
Problem statement	✓		
Objectives	✓		tidak menyatakan mengapa kajian ini perlu dilakukan
Methodology	✓		
Expected output/outcome/implication	✓		
Significance of output	✓		
Research Background	✓		
Elaboration of title	✓		terdapat kajian terdahulu yang melihat kesan 'tool parameters' dim proses yang sama
Clarity of problem statement and research question/hypothesis/theoretical framework (if applicable)	✓		
Cited most recent (last 5 years) related references	✓		Literature review tidak menjelaskan mengapa kajian ini perlu dilakukan.
In line with government policy, national agenda and global aspiration (can help alleviate problem at local, national or world level)	✓		
Objectives	✓		
Specific, Measurable, Achievable, Realistic and within Time-frame (SMART)	✓		
Relate to problem statement/research question	✓		

Methodology	✓	✗	Comment
Clear and detailed description of methodology (may consist of field work, sampling techniques, interview session, analysis, lab work of different phases, experimental protocol, statistical analysis)	✓		kaedah kajian sangat umum dan perlu diperbaiki
Able to achieve research objectives	✓		
Include research design, flow chart, Gantt chart, activities and milestones	✓		
Expected Result	✓		
New theory or new findings/knowledge	✓		
Publication in indexed journals (top tier)/Intellectual property	✓		
Human capital - masters or PhD	✓		
Impact on society, economy and nation	✓		
Track/Record and Composition of Team	✓		
Evidence of previous successful research projects	✓		
Qualification and rank of researchers	✓		
Well balanced team	✓		
Quality of Proposal	✓		
Meticulous	✓		
Proper use of language (grammar, spelling, sentence construction)	✓		
Good formatting and presentation	✓		
Elements of FRGS Criteria	✓		telah ada kajian yang hampir sama
Novel, cutting edge, high impact	✓		
Total-Main	4	5	
Total-Sub	19	8	

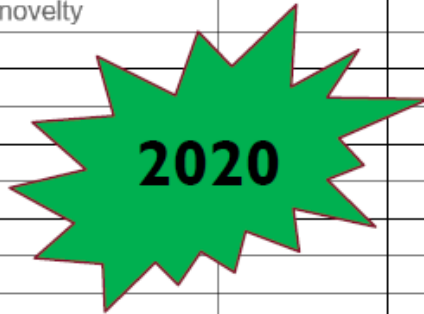
Cost Category	Proposed Funding (RM)	Recommended Funding (RM)	Percentage
Vot 11000 - Salary and Wages	86400	<input type="text"/>	61.19 %
Vot 21000 - Travelling and Transportation (Maksimum 40%)	8000	<input type="text"/>	5.67 %
Vot 24000 - Rental	0	<input type="text"/>	0.00 %
Vot 27000 - Research Materials and Supplies	30000	<input type="text"/>	21.25 %
Vot 28000 - Maintenance and Minor Repair Services	0	<input type="text"/>	0.00 %
Vot 29000 - Professional Services	7000	<input type="text"/>	4.96 %
Vot 35000 - Accessories and Equipment (Maksimum 40%)	9800	<input type="text"/>	6.94 %
Total	141200	141200	

SUMBER: **SLAID PPT, NORHAMIDI MUHAMAD



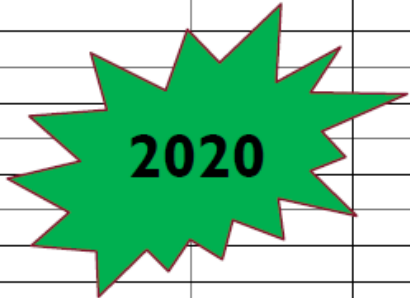
KRITERIA PENILAIAN FRGS 2020/2021

ASSESSMENT CRITERIA	WEIGHTAGE (%)	POOR 1-2	INADEQUATE 3-4	ACCEPTABLE 5-6	GOOD 7-8	EXCELLENT 9-10
Title (5%)						
Specific in nature reflecting fundamental issues to be resolved/novelty						
Brief and reflects the content of the proposal						
Executive Summary (20%)						
Problem statement						
Objectives						
Methodology						
Expected output/outcome/implication						
Significance of output						
Research Background (20%)						
Elaboration of title						
Clarity of problem statement and research question/hypothesis/theoretical framework (if applicable)						
Cited most recent (last 5 years) related references						
In line with government policy, national agenda and global aspiration (can help alleviate problem at local, national or world level)						
Objectives (10%)						
Specific, Measurable, Achievable, Realistic and within Time-frame (SMART)						
Relate to problem statement/research question						





ASSESSMENT CRITERIA	WEIGHTAGE (%)	POOR 1-2	INADEQUATE 3-4	ACCEPTABLE 5-6	GOOD 7-8	EXCELLENT 9-10
Methodology (15%)						
Clear and detailed description of methodology (may consist of field work, sampling techniques, interview session, analysis, lab work of different phases, experimental protocol, statistical analysis)						
Able to achieve research objectives						
Include research design, flow chart, Gantt chart, activities and milestones						
Expected Result (5%)						
New theory or new findings/knowledge						
Publication in indexed journals (top tier)/ <u>Intellectual property</u>						
Human capital - masters or PhD						
Impact on society, economy and nation						
Track Record and Composition of Team (5%)						
Evidence of previous successful research projects						
Qualification and rank of researchers						
Well balanced team						
Quality of Proposal (5%)						
Meticulous						
Proper use of language (grammar, spelling, sentence construction)						
Good formatting and presentation						
Elements of FRGS Criteria (5%)						
Novel, cutting edge, high impact						
Appropriateness of Cost Estimates (10%)						
Budget cost						





Changes in FRGS 2020 form

Application Details

Project Leader

Research Information

Equipment & Material

Budget

Additional Information

Declaration

Appendix

Form Submission

Patent Search (describe how your research output shall produce an innovation idea or technology that has the potential to be a solution to future stakeholders (community, industry, government etc.) and offer a unique proposition not found in potential competitors)

To identify if the researcher is able to coherently present a compelling argument for their proposal in light of the IP landscape and factors identified in the (Yes/No) Section. The answer would reflect an understanding of their research advantage and limitations and the prospect of moving the completed research beyond this stage of funding.
*Please download and fill in the Simplified Patent Search Report and attach it as a file [Simplified Patent Search Report](#)

Syarat 2.1.8, Garis Panduan 2020

2%

500 words left

Attach File Delete File

Syarat 2.1.7, Garis Panduan 2020

2%

Research Collaborator

- International/Industrial Linkages (Please identify any industry or end-user group involved in the project, and describe its role/contribution to the project)
- Agency/Organisation (Please identify all agencies/organisations collaborating in the project, and describe their role/contribution to the project)

Risk Assessment (Please describe factors that may cause delays in, or prevent implementation of, the project as proposed above; estimate the degree of risk)

Analisis Risiko

1%

500 words left

Risk	Low	Medium	High
1. Technical	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Timing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Budget	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

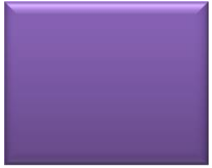


KRITERIA PEMARKAHAN TAHUN 2020

Program Dana Penyelidikan, Kementerian Pendidikan Malaysia

Rating	Kriteria Pemarkahan	Keputusan
1	Markah 59% dan ke bawah	Not Recommended (NR) (79% dan ke bawah)
2	Markah diperolehi 60% – 64%	
3	Markah diperolehi 65% – 69%	
4	Markah diperolehi 70% – 74%	
5	Markah diperolehi 75% – 79%	
6	Markah diperolehi 80% – 84%	Recommended (R) 80% - 84%
7	Markah diperolehi 85% – 89%	Highly Recommended (HR) (85% – 100%)
8	Markah diperolehi 90% – 94%	
9	Markah diperolehi 95% – 99%	
10	Markah diperolehi 100%	

Cadangan perakuan projek adalah
markah 80% dan ke atas



EXAMPLE: TITLE



MORE EXAMPLES OF GOOD FRGS TITLE

FRGS 2017 -1: Analysis of Geometric Complexities and Design Configuration for Restoration of Remanufacturable Components using Additive Manufacturing.

FRGS 2016 -1:

Characterization of Subsurface microstructure in cryogenic machining of alloy steel for Automotive Industry

FRGS 2015 -1:

New Global-Local Overlay Technique For Fatigue Reliability Analysis

Influence of cooled structure on tribological properties at tool chip interface in orthogonal cutting of magnesium alloy AZ31

BUT in 2019, please avoid using “Novel”, “New”, “Framework”, “Characterisation” etc



EXAMPLE: EXECUTIVE SUMMARY

Example : Exe. Summary

Executive Summary
➤ well written

Problem statements

Objectives

Methodology

Output

Surat Perintah dan Eksekutif Penyelidikan (maksima 300 patah perkataan)
Format makang penyelidikan, kajian literatur, kaedah penyelidikan, objektif dan jangkaan hasil

Approximately 7% of the world's carbon dioxide (CO₂) emissions are attributable to portland cement. In addition, the burning of Portland-cement clinker is costly in terms of fossil fuel usage. This impact of cement production on environment and the depletion of the world's most valuable fossil energy sources have necessitated the exploitation of sustainable binder materials. To date, the quaternary blended cement with replacement of ordinary portland cement (OPC) up to 66% by industrial wastes has been reported. The aim of this research is to investigate the possibility of producing an alternative sustainable cementitious materials (SUCeM) with 100% local industrial by-products (slag) and biogenic wastes (rice husk ash, timber fly ash and palm oil fuel ash) by mechano-chemical activation technique without going through the calcination and clinkering stage as OPC does. Mechano-chemical activation is a process in which reactions among ingredients are caused by mechanical energy without burning at high temperature and thus reduces CO₂ emission and fuel consumption. Rice husk ash (RHA), palm oil fuel ash (POFA), timber fly ash (TFA) and slag are wastes abundantly available in Malaysia and are pozzolanic in nature. Using these wastes, a quaternary blended composite binder named SUCeM will be developed in this research. The performance of the SUCeM will be evaluated by X-Ray Diffraction (XRD), Scanning Electron Microscopy (SEM), setting time and strength tests. The quaternary blended SUCeM could significantly contribute to achieving the needed balance between the industry's quest for high-performance products and the increasingly restrictive environmental regulations. SUCeM is expected to provide a unique opportunity to produce environmentally-friendly concrete with tailor-made properties, and may indeed constitute the next generation of binder products. As a new sustainable cementitious materials, SUCeMs have much beneficial advantages in environments. Not only non-toxic wastes can be transferred into useful building materials, but also the toxic and/or radioactive waste can be solidified and stabilized safely with SUCeMs.



Executive Summary of Research Proposal

FRGS 2017 -1: Analysis of Geometric Complexities and Design Configuration for Restoration of Remanufacturable Components using Additive Manufacturing.

Ensuring product sustainability through Remanufacturing is the way forward in today's Circular Economy. Remanufacturability of end-of-life engineered components are determined at the design stage. Hence there is a need for Design for Remanufacturing (DfRem) to ensure effective restoration of the end-of-life components to bring them to as-new condition through inspection, disassembly, reprocessing, reassembly and testing. Recently, Additive Manufacturing (AM) has emerged as the most promising technology to support remanufacturing as it offers a sustainable process that uses less material and offers flexibility in design and shorter time to market. Technologies such as Powder Bed Fusion enables replacement of components on demand while Directed Energy Deposition enables repair, refurbishment and remanufacturing. Despite the potential benefits, AM deployment in remanufacturing application is still immature in terms of handling complex geometries for restoration and retaining their functionality and performance. It is therefore necessary to study and analyse the design metrics (i.e. design metrics and topology) and configuration design (assembly, reassembly, architecture and component interaction) of components such as alternators or brake calipers for purpose of remanufacturing (for component repair and surface enhancement) using AM. In this research, the level of complexity and interactions between the components will be analysed using CAD systems and configuration assessment will be conducted from the perspective of assembly orientation, spatial constraints, material compatibility. The interactions between the components in a configuration for component restoration will be ascertained and presented for traceability in the development of enabling systems namely CAD and additive manufacturing technology for remanufacturing applications. Results of this research will be able to support the generation of heuristics and rules in CAD modelling and principles in DfRem using AM. This research will provide a timely and significant contribution to the area of sustainable product development.

PROBLEM
STATEMENT

OBJECTIVE

METHODOLOGY

OUTPUT



One of the difficulties to machine magnesium alloys AZ31 is self-ignition of fine chip particles at higher cutting speed under dry condition. The application of water based coolant however lead to formation of hydrogen gas which is very hazardous to cause an explosion. Low melting point and material adhesion attributes by magnesium alloy tend to tremendously affect the tool-chip contact zone since high amount of heat generated at secondary shear zone lead to formation of built-up edge (BUE) formation and built up layer (BUL). In this study it is to elucidate the inherent relationship among the tribological condition and thermomechanical load from the thermo-viscoplastic behavior of AZ31 Mg alloy due to presence of cooled structure at tool chip interface.

Numerical framework adopted for modelling of orthogonal cutting with presence of cooled structure is implemented via Arbitrary Lagrangian Eulerian (ALE) formulation to access tribological condition and thermomechanical load along the contact region. To validate the model, the finite element results will be compared to the experimental data over a wide range of cutting speed. Besides, to underline consequence of cooled structure at tool chip interface, wear mechanism modes experimentally identified and significant parameters associate to surface quality of AZ31 Mg alloy will be compared to conventional dry cutting. The outcomes of this research will furnish a fundamental understanding of tribological behavior of the coupling between the contact tribological conditions and thermomechanical loading at tool chip interface encompass chip and cooled structure. Not least, it provides an insight of passive cooling feasibility which is very beneficial as an alternative method of cooling towards green technology in machining industry.

PROBLEM STATEMENT

OBJECTIVE

METHODOLOGY

OUTPUT



PROBLEM STATEMENT

Problem Statement

Magnesium and its alloys are the materials which have low melting point that could lead to self-ignition from generated powder and tiny chips at high cutting temperature. In particular, a lack of stability at increased temperatures is often associated with magnesium ignition and burning when in contact with an open flame or heat source. Previous study revealed surface roughness improved with increasing in cutting speed for both dry and cryogenic machining of magnesium alloy [1][2]. Unfortunately, excessive elevated temperature at high cutting speed might causes fires that prevalent when the melting point (400 – 600 °C) is exceeded [3][4]. In addition, it is found magnesium chips tend to melt and contribute to flank build-up (FBU) due to adhesion between cutting tool and workpiece, thereby influencing the surface finish [5]. Wet cutting is the most common cooling method applied in cutting the metal-alloys. However, the problem arise when water based coolant is used in machining magnesium alloys due to water reaction with magnesium alloys produce hydrogen gas that can threaten for explosion. Besides, this method associate with high cost, pollution and harmful to operators. Timely exposure to the airborne particles of the mist due to consequent of cutting fluid vaporization would lead to hazardous disease. In high heat generated machine process with MQL, emulsion used in water have a low lubricating effect [6] thus lower heat transfer capacity and it do not dissipate heat at the tool as well.

2. Hypothesis

- 1) Partially isolated and cooled the rake face increase in heat adsorption at tool chip interface (secondary shear zone).
- 2) Combination of low angle and high height of cooled structure geometry lead to reduce frictional stress and normal stress consequence of rapid chip separation from tool rake face.
- 3) Huge thermal gradient between cutting edge and rake face aid in detaining reaching the melting point of work material in avoiding built up edge (BUE) wear mechanism.

3. Research Questions

- 1) How presence of cooled structure at the tool rake face affect thermomechanical load at tool chip interface?
- 2) How cooled structure geometry reduce tool chip contact length referring to distribution of frictional stress and normal stress at rake face?
- 3) How heat adsorption effect due to cooled structure at secondary shear zone improve dominant built up edge (BUE) wear mechanism and surface quality of AZ31 Mg alloy?



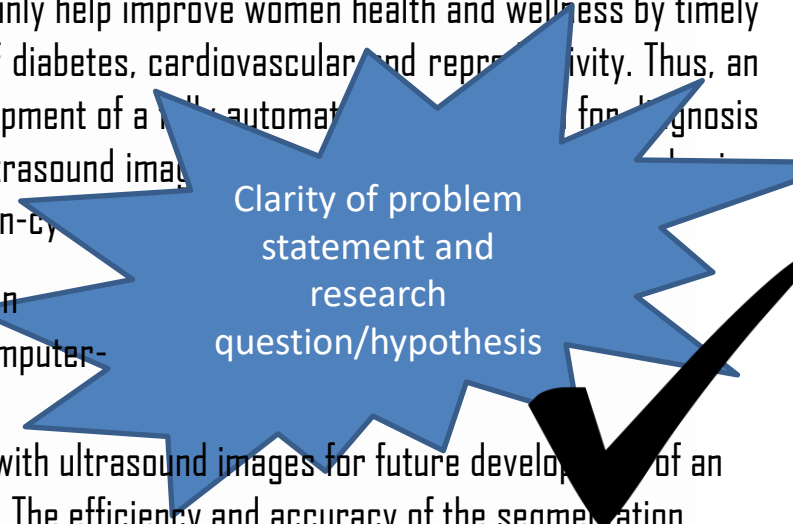
Problem Statement - PCOS is characterized by a collection of incomplete developed follicles in the ovaries. Manual analysis of PCOS diagnosis often produces errors and it is a laborious task. Many researchers have been enthusiastically working in the detecting and identifying PCOS automatically. The main challenges in an automated PCOS-DvFI are namely due to: (1) poor image's quality due to speckle noise, (2) lack of a fully automated segmentation algorithm particularly for smaller follicles as well as follicles that are close to each other, and (3) complexity of existing algorithms, which results in sub-standard segmentation results.

An effectual software tool for diagnosis and screening of PCOS that is automatic can certainly help improve women health and wellness by timely receiving preventive therapy women to avoid PCOS related complications such as risks of diabetes, cardiovascular and reproductive. Thus, an accurate and effective segmentation method is one of the key elements towards the development of a fully automated software tool for diagnosis and screening of ovarian cyst/PCOS-DvFI using ultrasound images. The well-segmented ultrasound images can be used to develop a state-of-the-art deep learning neural network for the ultimate task of classifying cystic/non-cystic.

HYPOTHESIS - Collinear and triangle equations can be effectively used to segment ovarian ultrasound images for follicle identification, hence possibly be implemented to develop a computer-assisted tool for diagnosing and screening ovarian cyst or PCOS.

RESEARCH QUESTIONS - Segmentation is of great significance especially when dealing with ultrasound images for future development of an effectual and accurate software tool for the diagnosis and screening of ovarian cyst/PCOS. The efficiency and accuracy of the segmentation algorithm are important factors to guarantee good diagnosis and screening results. Thus, the research must address the following questions:

- 1) How to combine collinear and triangle equations and use them in the formulation of the segmentation method?
- 2) How can the combinatorial collinear and triangle equations (CCTE) be formulated to deliver promising segmentation results?
- 3) How effective is the CCTE in executing the segmentation task?





PROJECT OBJECTIVES



Example : Project Objectives

TITLE: The Rheological Properties of Yttria Stabilized Zirconia (YSZ) Injected Green Body via Ceramic Injection Molding (CIM) Technique

- 1. To investigate the effect of powder concentration and binder formulation on rheological properties of the feedstock for injection process.**
- 2. To determine the effect of different of powder concentration and binder formulation of feedstock to the final shape of sintered part.**

Objective(s) of the Research

- 1) To analyze the interaction between the thermomechanical chip formation and the tribological conditions at the tool–chip interface and the chip – cooled structure contact region.
- 2) To elucidate effect on tool chip contact length to the distributions of frictional stress and normal stress subject to the geometry of cooled structure.
- 3) To investigate tool wear mechanism and its relation to surface quality in orthogonal cutting of AZ31 Mg alloy with the presence of cooled structure compared to dry cutting.



AVOID

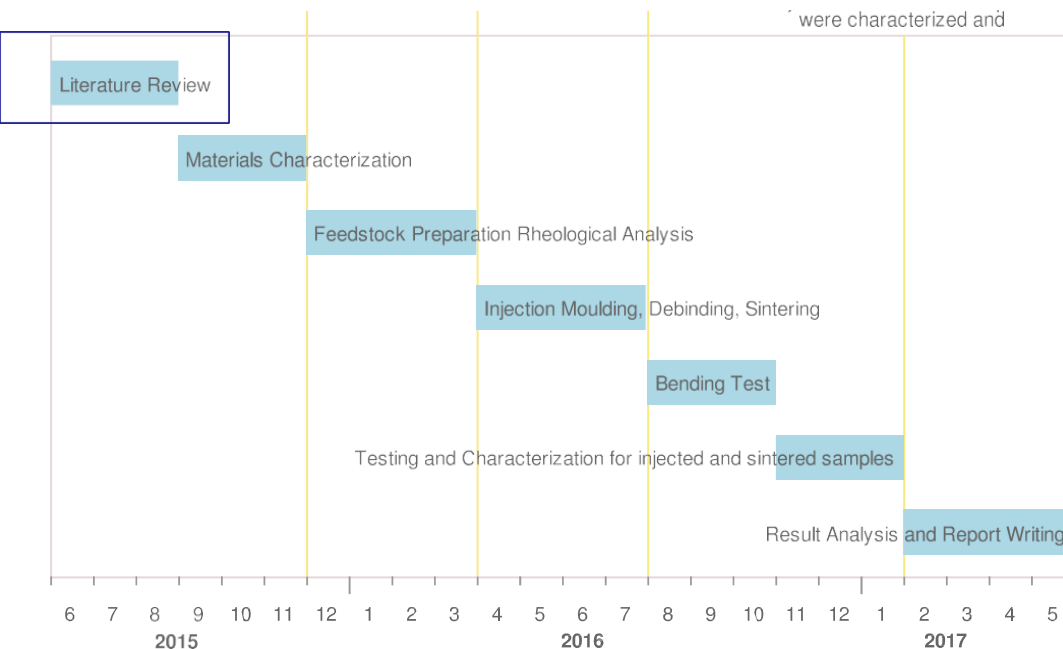
To develop..

To design..

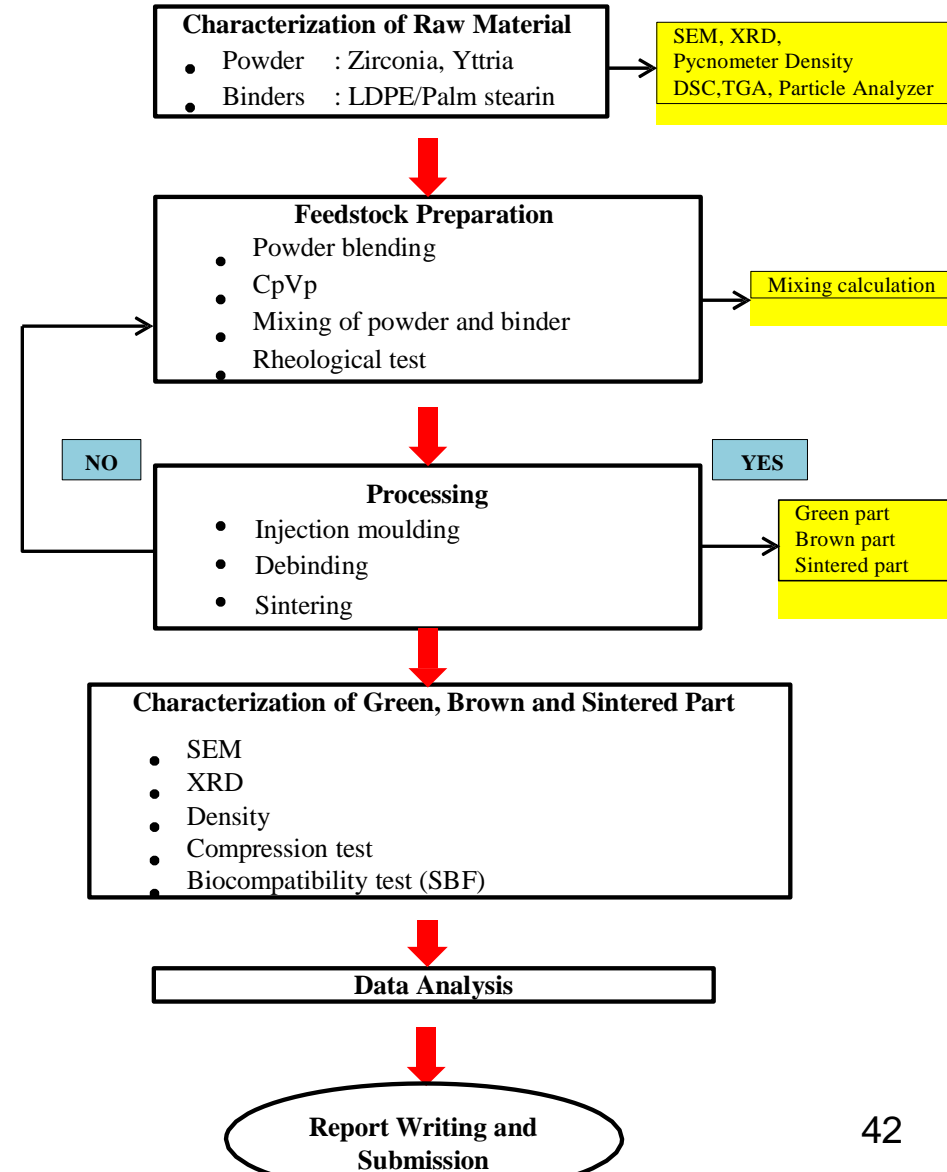
To implement...

Methodology

TITLE: The Rheological Properties of Yttria Stabilized Zirconia (YSZ) Injected Green Body via Ceramic Injection Molding (CIM) Technique

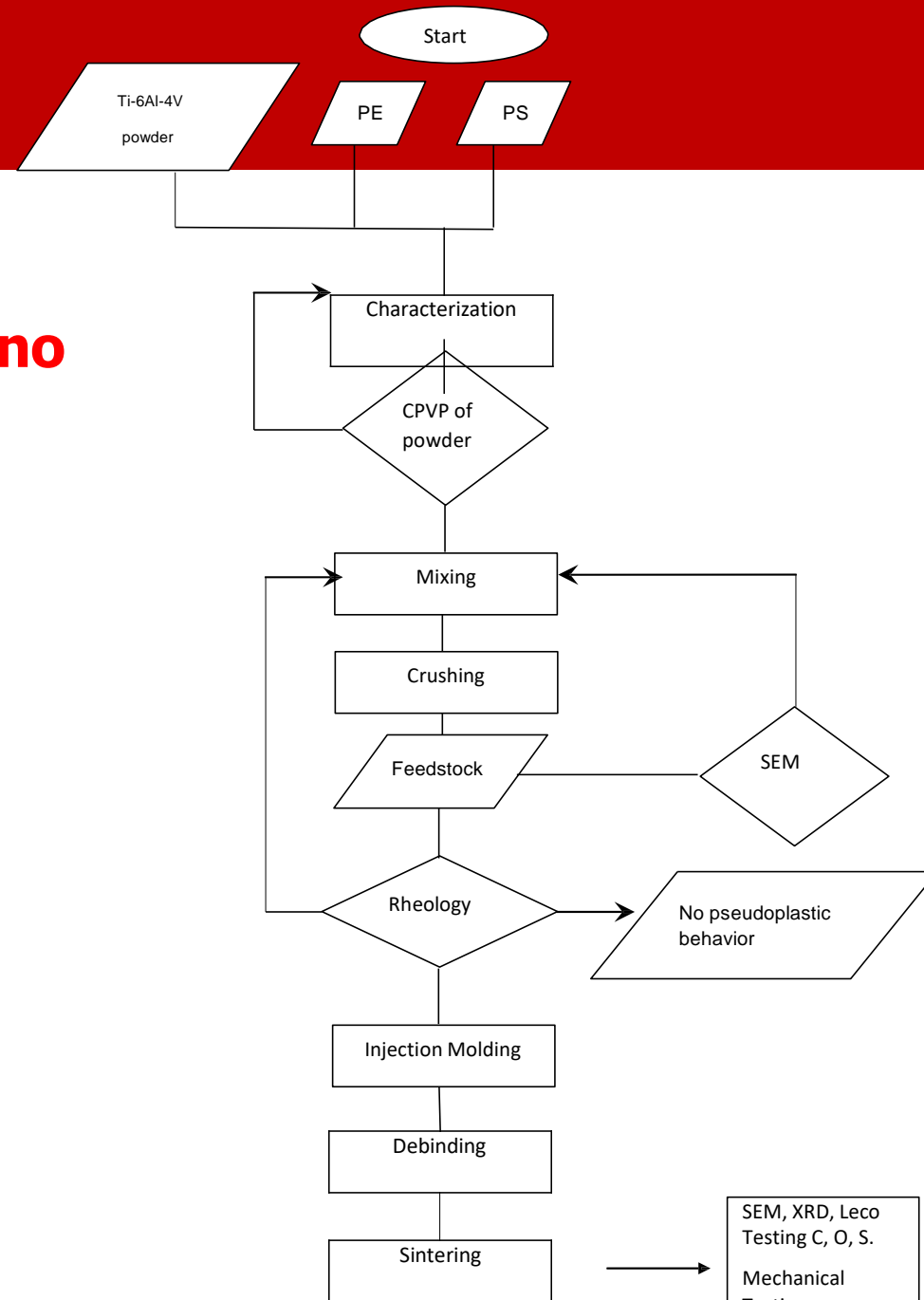


Time allocated for Rheological study only 4 months



Methodology

In the proposal – see Appendix – no description





Example : Expected Results

(e) Expected Results/Benefit

1. Novel theories/New findings/Knowledge

The main goal of this research work is to get uniform dispersion and uniaxial direction of graphene nano platelets within the matrix for the production of highly conductive Cu/graphene composite material for thermal management applications. The achieved thermal conductivity will be better than the available conventional alloy/composite materials. Until now, there is no study being carried out to fabricate and align the graphene in Cu-graphene composite using the powder injection molding process.

- method to fabricate and align graphene nano patelets in Cu/graphene composite for production of highly conductive Cu/graphene composite material for thermal management applications

2. Research Publications

3 index journals and 2 conference articles

1. Journal of Material Processing Technology, (IF 1.7, Q1)
2. Material and Design (IF 2.3, Q1)
3. Composite: Part B (IF 1.731, Q1)

Total Number of Publications: 5

NEW FORMAT FOR JOURNAL OUTPUT

Environment

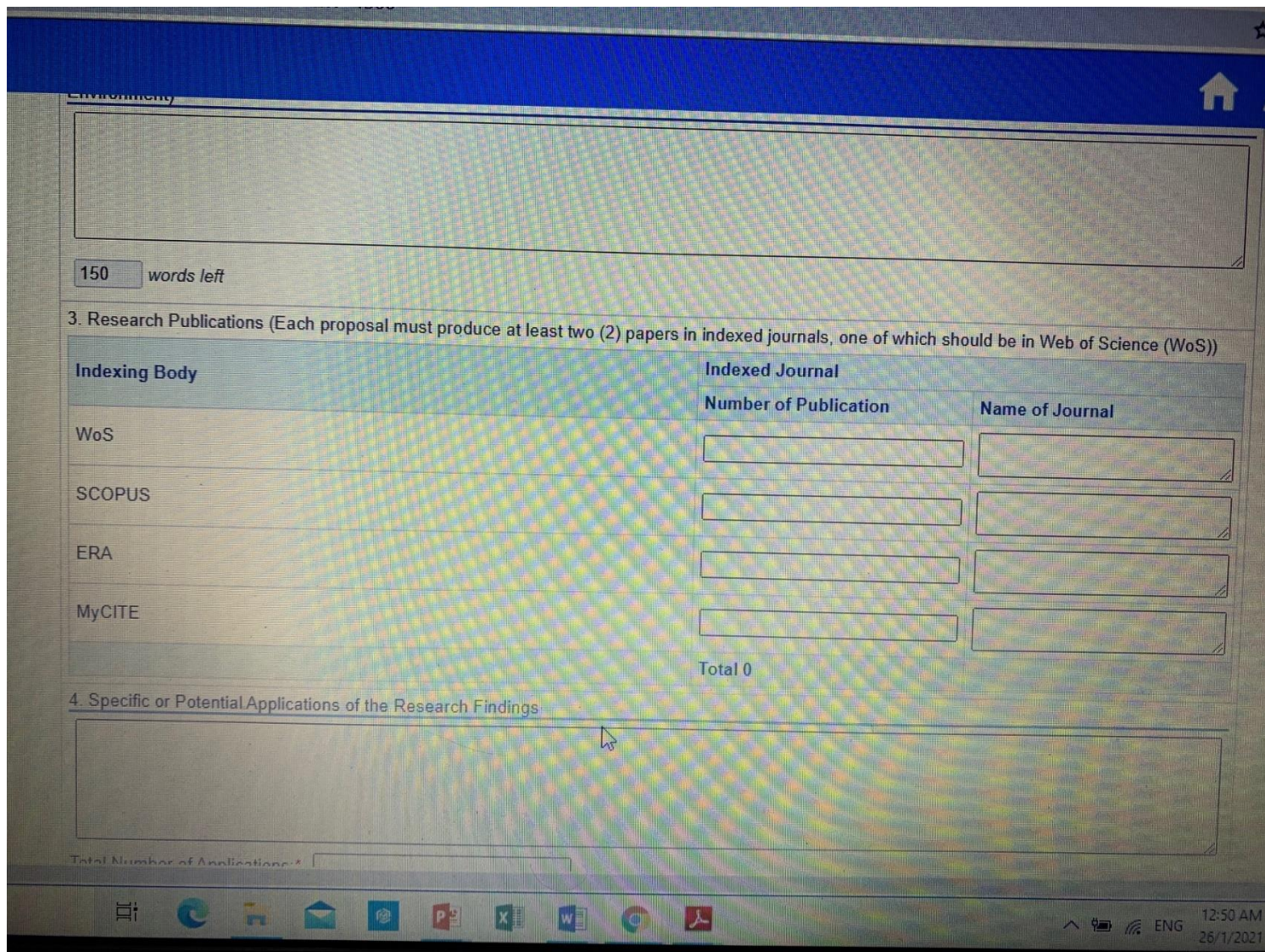
150 words left

3. Research Publications (Each proposal must produce at least two (2) papers in indexed journals, one of which should be in Web of Science (WoS))

Indexing Body	Indexed Journal	
	Number of Publication	Name of Journal
WoS	<input type="text"/>	<input type="text"/>
SCOPUS	<input type="text"/>	<input type="text"/>
ERA	<input type="text"/>	<input type="text"/>
MyCITE	<input type="text"/>	<input type="text"/>
		Total 0

4. Specific or Potential Applications of the Research Findings

Total Number of Applications:





Example : Expected Results

(e) Expected Results/Benefit

3. Specific or Potential Applications

Thermal management device - Heat sink

Total Number of Applications: 1

4. Number of PhD and Masters (by research) Students

Number of PhD Students: 1

Number of Masters (by research) Students:

Remark (if any):

5. Impact on Society, Economy and Nation

The knowledge can later be transferred to the local industries therefore can increase the capabilities of Malaysian industries into the manufacturing of high end product

6. Intellectual Property(IP)

1. Fabrication of Cu/graphane composite using Powder Injection Moulding Process

Total Number of IP: 1



COSTING



EXAMPLE: COSTING 1

Budget Type	Description	Year 1	Year 2	Year 3	Grand Total
11000 - Salary and Wages	Untuk Pembantu Penyelidik Siswazah (GRA) 1 research assistant (master student) at RM1800 per month 1 research student PhD student at RM2300 per month	49200	49200	49200	147600
Vot-Total		49200	49200	49200	(59.13%) 147600
21000 - Travelling and Transportation Local	Meeting, conference, data collection and exhibition	8000	8000	8000	24000
Sub-Total		8000	8000	8000	(9.62%) 24000
Overseas	Meeting and conference	15000	15000	15000	45000
Sub-Total		15000	15000	15000	(18.03%) 45000
Field work					0
Sub-Total		0	0	0	(0.00%) 0
Vot-Total		23000	23000	23000	(27.64%) 69000
24000 - Rental					0
Vot-Total		0	0	0	(0.00%) 0

Example : Costing 1 (REJECTED)

Budget Type	Description	Year 1	Year 2	Year 3	Grand Total
27000 - Research Materials and Supplies	computers accessories and consumables	1000	1000	1000	3000
Vot-Total		1000	1000	1000	(1.20%) 3000
28000 - Maintenance and Minor Repair Services					0
Vot-Total		0	0	0	(0.00%) 0
29000 - Professional Services/Consultancy	consultation	2000	2000	2000	6000
Sub-Total		2000	2000	2000	(2.40%) 6000
Short term course					0
Sub-Total		0	0	0	(0.00%) 0
Vot-Total		2000	2000	2000	(2.40%) 6000
35000 - Accessories and Equipment	high speed processor and others	8000	8000	8000	24000
Vot-Total		8000	8000	8000	(9.62%) 24000
Grand Total		83200	83200	83200	(100.00%) 249600

Example : Costing 2

Budget Type	Description	Year 1	Year 2	Year 3	Grand Total
11000 - Salary and Wages	I Phd @ 2300/month & 1	27600	27600	27600	82800
Vot-Total		27600	27600	27600	(38.02%) 82800
21000 - Travelling and Transportation (Local)	National Conference		2000	2000	4000
Sub-Total		0	2000	2000	(1.84%) 4000
Overseas	International conference - International Conference on the Metal Injection Molding of Metals, Ceramics and Carbides (USA)		15000		15000
Sub-Total		0	15000	0	(6.89%) 15000
Field work					0
Sub-Total		0	0	0	(0.00%) 0
Vot-Total		0	17000	2000	(8.72%) 19000
24000 - Rental	Material characterisation (SEM,TGA DSC, EDX, XRD/Raman Raman Spectroscopy tensile machine etc - should be 29000		5000	10000	15000
Vot-Total		0	5000	10000	(6.89%) 15000
27000 - Research Materials and Supplies	Copper Powder - 30kg @ RM500/kg	15000			15000
	Graphene Nanoplatets - 1.5kg @ RM1000/100g	15000			15000
	Binder system - PEG, PMMA, SA	5000			5000
	Gas - Agron, Hidrogen for debinding and sintering		5000	5000	10000
Vot-Total		35000	5000	5000	(20.66%) 45000

Example : Costing 2.. (OK)

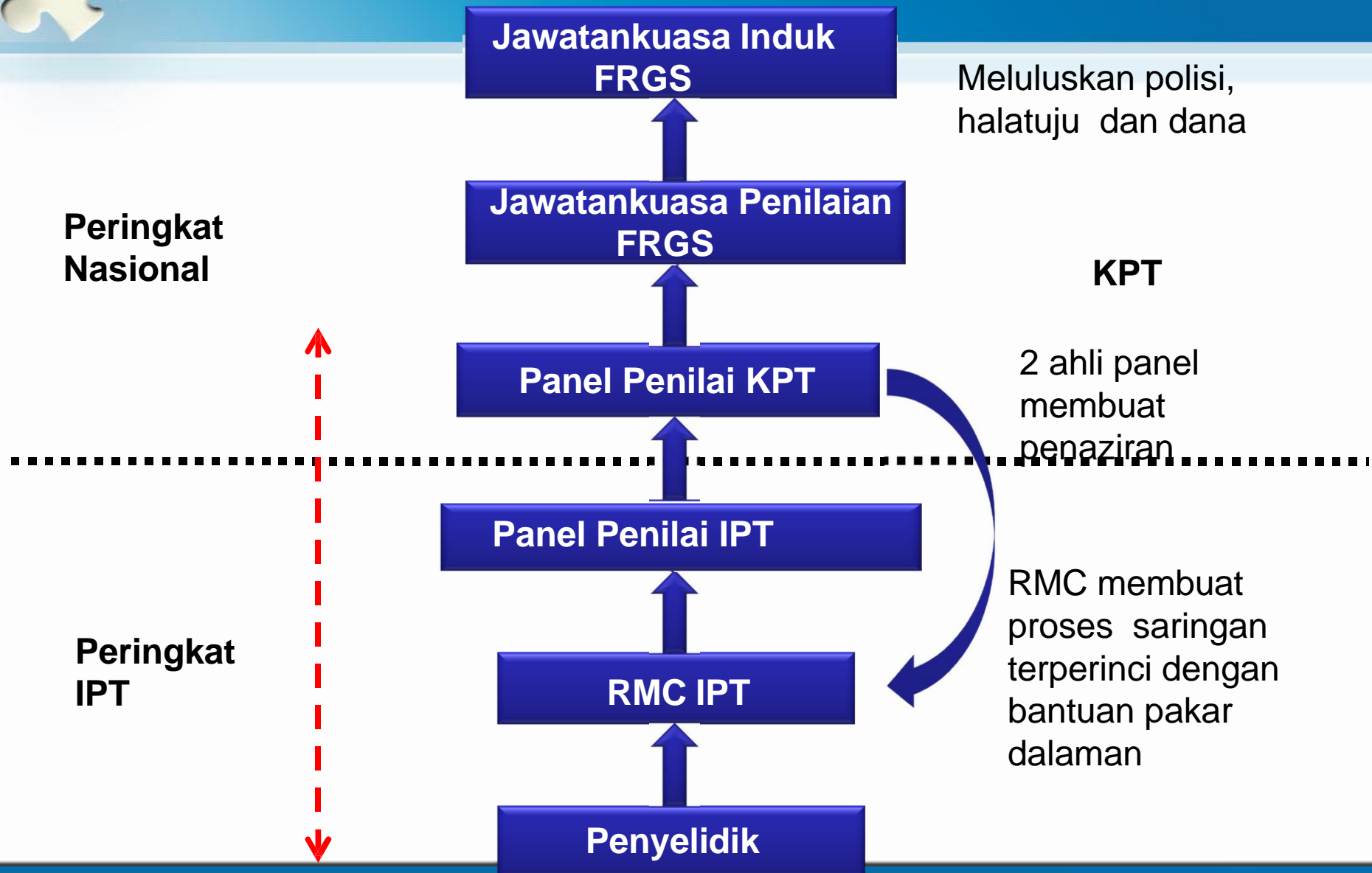
28000 - Maintenance and Minor Repair Services	Injection Moulding Machine	5000	4000		9000
	Debinding Furnace		5000		5000
	Sintering Furnace		5000	5000	10000
Vot-Total		5000	14000	5000	(11.02%) 24000
29000 - Professional Services/Consultancy	Mould Fabrication	20000			20000
	Editing services for journal publication		3000	3000	6000
	Conferences fee	1000	3000	2000	6000
Sub-Total		21000	6000	5000	(14.69%) 32000
Short term course					0
Sub-Total		0	0	0	(0.00%) 0
Vot-Total		21000	6000	5000	(14.69%) 32000
35000 - Accessories and Equipment					0
Vot-Total		0	0	0	(0.00%) 0
Grand Total		88600	74600	54600	(100.00%) 217800

1. ALASAN PENOLAKAN PERMOHONAN GERAN FRGS

- The proposal **does not contain a fundamental element** and **unconvincing in producing new discoveries**.
- The proposal **project has been made by other researchers**. Less impact on society.
- The objectives stated are not being achievable via the proposed **methodology (not clear)**.
- No proof **(not verified by RMC) for the current FRGS is more than 75%**. Evidence of previous study and published papers not provided.
- The **research background is too brief**, the research gap is not clearly addressed and lacking of fundamental issues. **No clear contribution to theory**. Unclear link between research problem and objectives.
- **Too many hypothesis to test**. Methodology need to be elaborated further especially on the specific method.
- The proposal is not comply with FRGS standard; **most of reference are more than 5 years**.

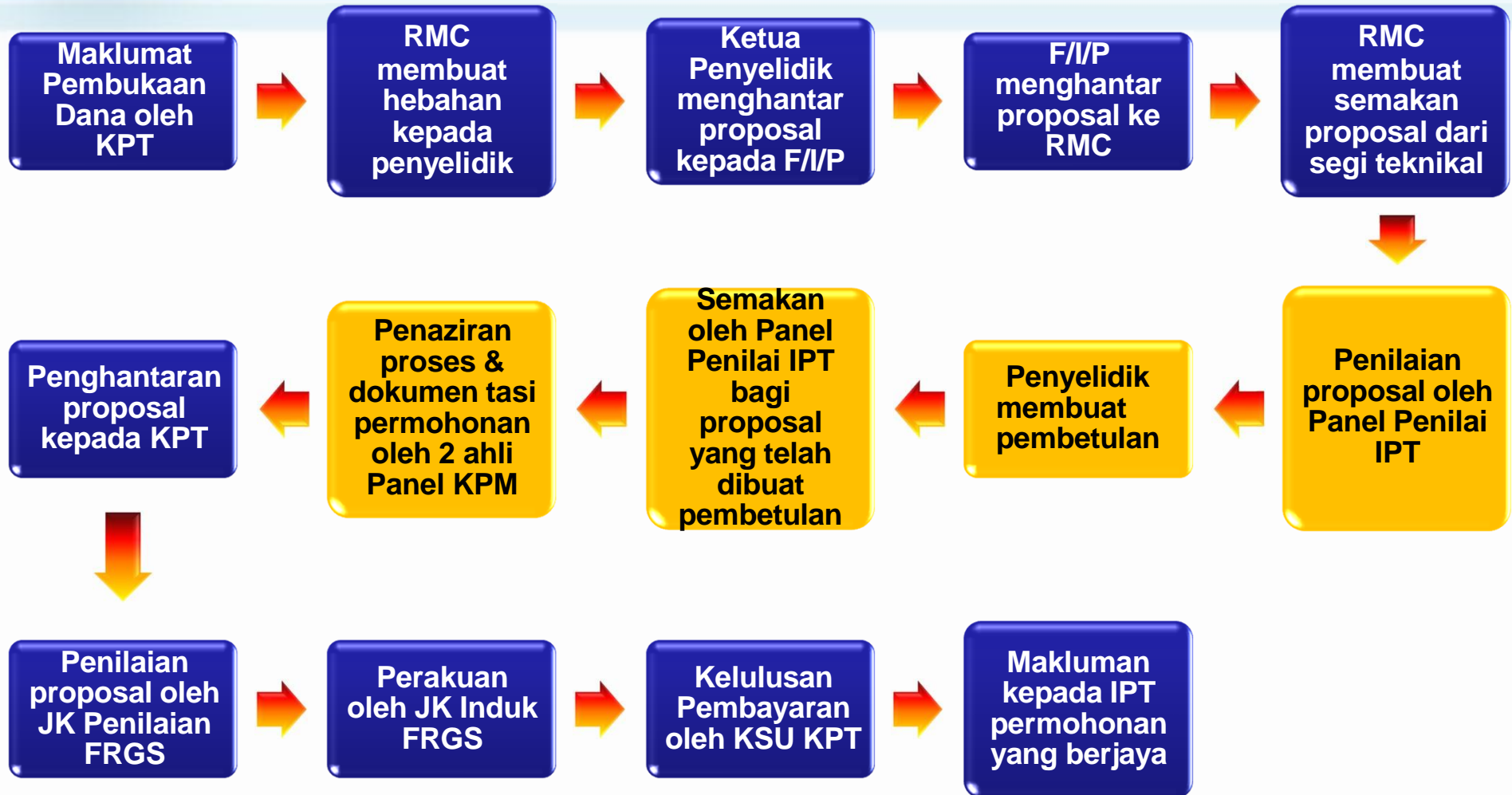


PROSES PERMOHONAN DAN PENILAIAN FRGS





PROSES PERMOHONAN DAN PENILAIAN FRGS





TUJUAN PENILAIAN PERINGKAT IPT

Membantu penyelidik mendapat geran FRGS dan memastikan proposal yang dikemukakan ke KPT adalah berkualiti dan memenuhi standard dan keperluan dalam garis panduan permohonan



PERKARA PENTING DALAM PENILAIAN KELULUSAN ETIKA

Kelulusan Jawatankuasa Etika manusia/haiwan (jika berkaitan) perlu disertakan bersama laporan kemajuan pertama.



PERKARA PENTING DALAM PENILAIAN BAHAGIAN PERUNTUKAN

Vot 11000 (Upah & Elaun)

- Upah dan Elaun untuk Pembantu Penyelidik Siswazah (GRA) sahaja.
- RA (Pembantu Penyelidik) tidak dibenarkan.
- GRA mesti warganegara Malaysia.
- Kadar dan syarat lantikan mengikut garis panduan TERBARU
- PhD – RM2500, Master – RM2000





PERKARA PENTING DALAM PENILAIAN BAHAGIAN PERUNTUKAN

Vot 21000 (Perjalanan dan Pengangkutan)

- Hanya Ketua Penyelidik dan ahli sahaja yang dibenarkan perjalanan ke luar negara.
- Pembantu penyelidik siswazah hanya dibenarkan untuk mengikuti persidangan, seminar atau bengkel yang berkaitan dengan penyelidikan mereka di dalam negara sahaja.



PERKARA PENTING DALAM PENILAIAN BAHAGIAN PERUNTUKAN

Vot 24000 (Sewaan)

- Sewaan hanya dibenarkan untuk bangunan, peralatan, pengangkutan dan barangan lain yang terlibat secara langsung dengan penyelidikan.
- Perlu ada perincian sewaan.



PERKARA PENTING DALAM PENILAIAN BAHAGIAN PERUNTUKAN

Vot 27000 (Bekalan dan Bahan Penyelidikan)

- Hanya perbelanjaan yang berkaitan dengan penyelidikan sahaja dibenarkan.
- Perlu ada senarai item, perincian bekalan dan bahan penyelidikan yang akan dibeli.
- Jika ada pembelian **bahan kimia**, kos pelupusan sisa bahan kimia perlu dimasukkan (10% daripada harga pembelian bahan kimia)



PERKARA PENTING DALAM PENILAIAN BAHAGIAN PERUNTUKAN

Vot 28000 (Baik pulih kecil dan ubahsuai)

- Hanya perbelanjaan untuk baik pulih dan pengubahsuaian yang kecil terhadap bangunan, makmal, peralatan atau lain-lain barang yang berkaitan dengan penyelidikan dibenarkan.
- Kos penyelenggaraan peralatan sedia ada semasa projek dilaksanakan adalah dibenarkan.



PERKARA PENTING DALAM PENILAIAN BAHAGIAN PERUNTUKAN

Vot 29000 (Perkhidmatan Ikhtisas)

- **Vot ini meliputi lain-lain perkhidmatan termasuk:**
 - Percetakan
 - Hospitaliti
 - Honorarium
 - perkhidmatan profesional
 - Konsultansi
 - Pemprosesan data
 - Lain-lain perkhidmatan yang berkaitan dengan projek penyelidikan.



PERKARA PENTING DALAM PENILAIAN BAHAGIAN PERUNTUKAN

Vot 35000 (Aksesori dan Peralatan)

- Hanya pembelian peralatan khas dan aksesori (termasuk meningkatkan keupayaan peralatan sedia ada) yang berkaitan dengan projek penyelidikan berkenaan sahaja dibenarkan.
- Setiap permohonan mestilah disertakan justifikasi dan sebut harga mengikut pekeliling Perbendaharaan.
- Tidak dibenarkan membeli peralatan komunikasi dan perkakasan ICT seperti workstation, laptop, iPad, hand phone, printer, stationery yang tidak berkaitan langsung dengan projek penyelidikan.



SYARAT TAMBAHAN PERMOHONAN

Geran Penyelidikan Dana Penyelidikan KPT Tahun 2021

Pindaan 2021

TEMPOH PERKHIDMATAN

Ketua Penyelidik mestilah berbaki **sekurang-kurangnya satu (1) tahun** di Institusi masing-masing mulai dari tarikh tutup permohonan FRGS.

01

CUTI BELAJAR / SABATIKAL

Melebihi tempoh enam (6) bulan tidak dibenarkan mengemukakan permohonan. Maklumat cuti perlu dikemaskini oleh Penyelidik

02

PENYELIDIK BERSAMA

Ketua Penyelidik dimestikan mempunyai seorang (1) penyelidik bersama yang mempunyai kepakaran yang sama dan dari Institusi yang sama

03

BUKTI CARIAN PATEN

Penyelidik perlu kemukakan bukti carian paten bagi setiap permohonan projek

04

KOLABORASI INDUSTRI / AGENSI

Penyelidik perlu membuat kolaborasi dengan Industri/Agensi yang berkaitan bagi melaksanakan penyelidikan

05

PENGURUSAN RISIKO

Penyelidik perlu mengenalpasti sebarang kemungkinan / peluang yang akan berlaku sebelum, semasa dan selepas pelaksanaan penyelidikan

06



01

TEMPOH PERKHIDMATAN KETUA PENYELIDIK



KEMENTERIAN
PENDIDIKAN
MALAYSIA

JPT
JABATAN
PENDIDIKAN
TINGGI

Tempoh perkhidmatan Ketua Penyelidik mestilah berbaki **sekurang-kurangnya satu (1) tahun** di Institusi masing-masing mulai daripada tarikh tutup permohonan FRGS.

Maklumat Profil Penyelidik perlu dikemaskini oleh Penyelidik dalam MyGRANTS, dan disahkan oleh RMC Institusi masing-masing.

Geran ini terbuka kepada **kakitangan akademik** (Profesor, Profesor Madya, Pensyarah Kanan dan Pensyarah) yang mempunyai **sekurang-kurangnya Ijazah Sarjana**

Pegawai penyelidik atau pegawai pasca doktoral hanya **dibenarkan menjadi penyelidik bersama**.

Pindaan
2021

Modul Profil Penyelidik - MyGRANTS

Personal Info	
IC/Passport No. * <small>(e.g. 8012310800 or 4123456)</small>	<input type="text"/>
Date of Birth *	<input type="text"/>
Age	<input type="text"/>
Nationality *	Malaysia
Race *	<input type="text"/>
Gender *	<input type="radio"/> Male <input type="radio"/> Female
Staff ID	<input type="text"/>
Position Category * <small>(If you are an associate professor or equivalent position)</small>	Professor
Designation *	<input type="text"/>
Grade * <small>(e.g. GSAS 0200 or 0250)</small>	<input type="text"/>
IPSTAR *	<input type="text"/>
Employment Type *	<input checked="" type="radio"/> Faculty <input type="radio"/> Centre
Employment No. *	<input type="text"/>
Office Phone No.	<input type="text"/> Ext. <input type="text"/>
Academic Start Date * <small>(Add Away Date)</small>	<input type="text"/>
Academic Experience	Less than a month
Date of first appointment with this University *	31/12/2012
Type of Service *	Permanent

Pengiraan tempoh perkhidmatan adalah seperti berikut:

FRGS

mulai daripada **31 Mac 2021**



Penting: Kata kunci carian paten **mesti sama** dengan kata kunci yang dinyatakan dalam proposal

04

BUKTI CARIAN PATEN (PATENT SEARCH)

Bukti Carian Paten (Patent Search) perlu dikemukakan bagi setiap permohonan geran penyelidikan.

Menggunakan website <http://lens.org/> bagi tujuan carian paten

Objektif Utama:

Memberikan kesedaran “awareness” mengenai keperluan dan kepentingan menghasilkan penyelidikan yang unik dan inovatif

SYARAT KHUSUS



Amat Digalakkan

FRGS

Diwajibkan

PRGS

TRGS

LRGS

Pindaan
2021



KEMENTERIAN
PENDIDIKAN
MALAYSIA

JPT | JABATAN
PENDIDIKAN
TINGGI

05

KOLABORASI BERSAMA INDUSTRI / AGENSI

Kolaborasi dengan Industri/Agensi yang berkaitan bagi melaksanakan projek penyelidikan (bukti dokumen adalah sekurang-kurangnya surat niat (letter of intent) dan lain-lain dokumen yang berkaitan).



SYARAT KHUSUS

Amat Digalakkan

- FRGS
- PRGS

Diwajibkan

- TRGS
- LRGS

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Modul Permohonan MyGRANTS > "ADDITIONAL INFORMATION"

Research Collaborator

- International/Industrial Linkages (Please identify any industry or end-user group involved in the project, and describe its role/contribution to the project)
- Agency/Organisation (Please identify all agencies/organisations collaborating in the project, and describe their role/contribution to the project)

DOKUMEN INI ADALAH UNTUK RUJUKAN BUKAN UNTUK EDARAN ATAU PENERBITAN SEMULA



06

KEPERLUAN PENGURUSAN RISIKO



Penyelidik perlu **mengenalpasti sebarang risiko** (kekuatan / kelemahan / peluang / ancaman / lain-lain yang berkaitan) yang berpotensi berlaku sebelum, semasa dan selepas penyelidikan dilaksanakan.



Modul Permohonan MyGRANTS > “ADDITIONAL INFORMATION”

Risk Assessment (Please describe factors that may cause delays in, or prevent implementation of, the project as proposed above; estimate the degree of risk)

550 words left

Risk	Low	Medium	High
1. Technical	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Timing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Budget	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Penyelidik juga perlu menentukan tahap risiko (rendah – sederhana – tinggi) bagi tiga perkara seperti berikut:

- 1 Risiko - Teknikal
- 2 Risiko - Masa
- 3 Risiko – Kewangan / Bajet

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n 2021

SYARAT KHUSUS

Dimestikan

Diwajibkan

FRGS
TRGSPRGS
LRGS

DOKUMEN INI ADALAH UNTUK RUJUKAN BUKAN UNTUK EDARAN ATAU PENERBITAN SEMULA



PENGURUSAN KEWANGAN

Perbelanjaan hanya dibenarkan untuk vot-vot yang telah ditetapkan dalam Garis Panduan DP KPT sahaja

“Bajet perlu realistik”

V11000	V21000	V24000	V27000	V28000	V29000	V35000
ELAUN GRA	PERJALANAN DAN PENGANGKUTAN	SEWAAN	BEKALAN DAN BAHAN PENYELIDIKAN	BAIK PULIH KECIL DAN UBAHSUAI	PERKHIDMATAN IKHTISAS	AKSESORI DAN PERALATAN

Siling elaun tidak melebihi **RM2,500.00** untuk pelajar Ph.D dan **RM2,000.00** untuk pelajar Sarjana.

Perjalanan ke luar negara dibenarkan hanya **sekali sahaja**, bermula **tahun kedua dan ke atas**.

Pembayaran sewaan ruang/fasiliti di PTJ **tidak dibenarkan**

Tidak Dibenarkan:

- Pembelian bahan rujukan.
- Pembelian peralatan pejabat (seperti alat tulis/kertas).
- Pembelian peralatan storan (seperti external hardisk/pendrive /CD)

Baik pulih dan pengubahsuaian yang kecil terhadap bangunan, makmal, peralatan atau lain-lain barang yang berkaitan dengan penyelidikan dibenarkan.

Tidak Dibenarkan:

- Yuran keahlian badan profesional/ badan ikhtisas.
- Pembayaran bil utiliti/ telekomunikasi.
- Pembayaran pemfailan harta intelek

Wajib ada **sebut harga**

Pemotongan elaun GRA bagi tujuan pembayaran **KWSP & PERKESO** tidak dibenarkan.

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DOKUMEN INI ADALAH UNTUK RUJUKAN BUKAN UNTUK EDARAN ATAU PENERBITAN SEMULA



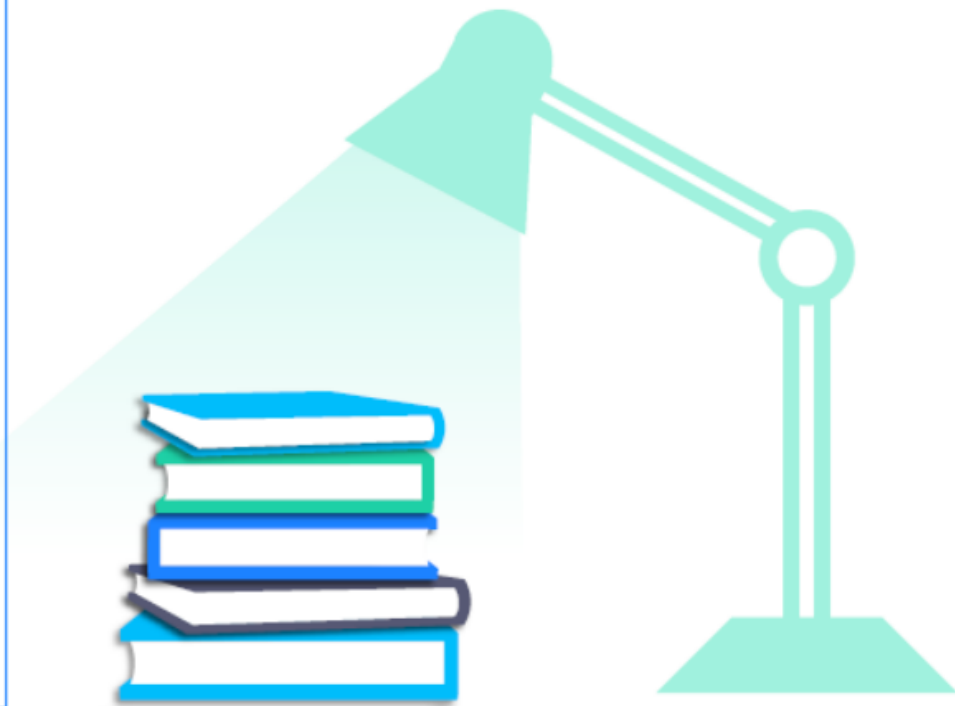
Penyelidik tidak dibenarkan untuk menggunakan peruntukan geran bagi membuat pembelian yang tidak berkaitan secara langsung dengan projek penyelidikan. Pembelian yang tidak dibenarkan adalah seperti berikut:-



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1. Pembayaran sebarang bentuk yuran keahlian badan profesional/badan ikhtisas dan seumpamanya;
2. Pembelian bahan rujukan dan seumpamanya;
3. Pembelian peralatan ICT dan komunikasi (seperti telefon bimbit/komputer riba/mesin pencetak/katrij dan seumpamanya);
4. Pembayaran bil utiliti/telekomunikasi;
5. Pembelian peralatan pejabat (seperti alat tulis/kertas/meja/kerusi dan seumpamanya);
6. Pembelian peralatan storan (seperti external hardisk/pendrive/CD dan seumpamanya);
7. Pembayaran sewaan ruang/fasiliti di Institusi masing-masing;
8. Pembayaran pemfailan harta intelek dan seumpamanya (FRGS, TRGS, LRGS sahaja); dan
9. Lain-lain pembelian yang tidak berkaitan secara langsung dengan projek penyelidikan.



Penggunaan peruntukan geran bagi caj pengurusan/pentadbiran adalah tidak dibenarkan.

DOKUMEN INI ADALAH UNTUK RUJUKAN BUKAN UNTUK EDARAN ATAU PENERBITAN SEMULA

HASIL PENYELIDIKAN FRGS

Garis Panduan Permohonan FRGS Pindaan 2021

BAKAT

1. **Projek 3 tahun:**

Disyaratkan untuk menghasilkan sekurang-kurangnya seorang (1) pelajar Ph.D atau dua (2) orang pelajar Sarjana mod penyelidikan sepenuh masa atau gabungan keduanya sebagai Pembantu Penyelidik Siswazah (Graduate Research Assistant - GRA).

2. **Projek 2 tahun:**

Disyaratkan untuk menghasilkan sekurang-kurangnya seorang (1) pelajar Sarjana mod penyelidikan sepenuh masa sebagai Pembantu Penyelidik Siswazah (Graduate Research Assistant - GRA).

3. **Penyelia utama** bagi pelajar Ph.D ataupun Sarjana mestilah **Ketua Penyelidik ataupun penyelidik bersama** dari Institusi yang sama dalam projek penyelidikan tersebut.

4. **Ketua Penyelidik** bukan **warganegara Malaysia** dimestikan melatih pelajar Ph.D atau pelajar **warganegara Malaysia sebagai GRA**.

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PENERBITAN

1. Semua penyelidik hendaklah menghasilkan sekurang-kurangnya dua (2) penerbitan artikel dalam jurnal terindeks (WoS/Scopus/ERA/MyCITE). Salah satu daripada penerbitan tersebut mestilah terindeks di Web of Science (WoS).
2. Penghasilan artikel dalam jurnal terindeks bersama pihak industri sebagai penulis bersama (co-author) amatlah digalakkan.
3. **Penghargaan kepada geran FRGS, KPT** mestilah dinyatakan dengan jelas dalam setiap penerbitan.

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HARTA INTELEK

1. Digalakkan untuk memohon pendaftaran harta intelek di dalam negara dahulu sebelum ke peringkat antarabangsa.
2. Harta intelek hasil geran FRGS menjadi hak milik bersama Kerajaan Malaysia dan Institusi.



ASSESSMENT CRITERIA

Title (5%)

- Specific in nature reflecting fundamental issues to be resolved/novelty
- Brief and reflects the content of the proposal

Executive Summary (10%)

- Problem statement
- Objectives
- Methodology
- Expected output/outcome/implication
- Significance of output

Research Background (15%)

- Elaboration of title
- Clarity of problem statement and research question/hypothesis/theoretical framework (if applicable)
- Cited most recent (last 5 years) related references
- In line with government policy, national agenda and global aspiration (can help alleviate problem at local, national or world level)

CARIAN PATEN

Amat Digalakkan

(2%)

KOLABORASI

Amat Digalakkan

(2%)

PENGURUSAN
RISIKO

Dimestikan

(1%)

Total 100% + 5% (Bonus)

ASSESSMENT CRITERIA (Con't)

Objectives (15%)

- Specific, Measurable, Achievable, Realistic and within Time frame (SMART)
- Relate to problem statement/research question

Methodology (25%)

- Clear and detailed description of methodology (may consist of field work, sampling techniques, interview session, analysis, lab work of different phases, experimental protocol, statistical analysis)
- Able to achieve research objectives
- Include research design, flow chart, Gantt chart, activities and milestones

Expected Result (10%)

- New theory or new findings/knowledge
- Publication in indexed journals (top tier)/Intellectual property
- Talent - masters or PhD
- Impact on society, economy and nation

ASSESSMENT CRITERIA (Con't)

Track Record and Composition of Team (5%)

- Evidence of previous successful research projects
- Qualification and rank of researchers
- Well balanced team

Quality of Proposal (10%)

- Meticulous
- Proper use of language (grammar, spelling, sentence construction)
- Good formatting and presentation

Elements of FRGS Criteria (5%)

- Novel, cutting edge, high impact



**Remember, your role is to make
sure that your proposal stands out
above the rest**

**SEKIAN, TERIMA
KASIH**

