



*Workshop for  
Proposal Writing  
FRGS 2021*

**UTEM – 28 January 2021**

**Prof. Dr. Ku Ruhana Ku Mahamud  
Universiti Utara Malaysia**

Introduction  
Proposal Evaluation  
Writing Guideline  
Summary

# Outline

# Introduction

MOHE funds

Fundamental research - FRGS, TRGS, LRGS

Development research - PRGS

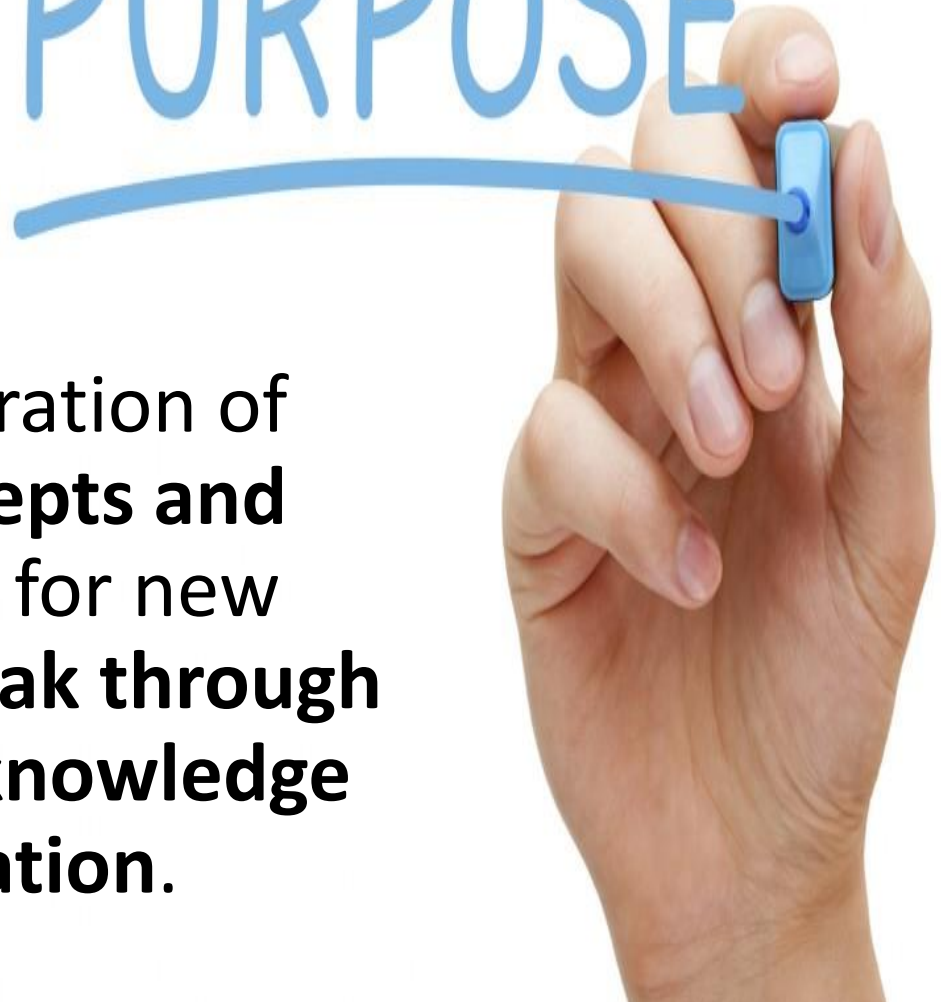
Ideas

PhD

Environment

# Introduction

PURPOSE



Propagate the generation of **new theories, concepts and ideas** - be a catalyst for new discoveries that **break through the boundaries of knowledge and innovation creation.**

# Introduction

Portal Rasmi

KEMENTERIAN PENGAJIAN TINGGI MALAYSIA  
MINISTRY OF HIGHER EDUCATION MALAYSIA

MyGRANTS  
MALAYSIA GREATER RESEARCH NETWORK SYSTEM

Carian Portal

Utama Profil Korporat Info MyGRANTS Geran Penyelidikan Output Carian MyGRANTS Kerjaya Hubungi Kami

Garis Panduan  
Jadual Pembukaan

**PEMBUKAAN PERMOHONAN GERAN PENYELIDIKAN TAHUN 2021**

Skim Geran Penyelidikan Fundamental (FRGS)  
Skim Geran Penyelidikan Pembangunan Prototaip (PRGS)  
di bawah Program Dana Penyelidikan Kementerian Pengajian Tinggi

**FRGS** **PRGS**

JPT JABATAN PENDIDIKAN TINGGI

MyGRANTS

Permohonan dibuka secara dalam talian melalui MyGRANTS mulai **18 Januari 2021**

Bahagian Kecemerlangan Penyelidikan IPT, Jabatan Pendidikan Tinggi Kementerian Pengajian Tinggi  
03-8870 6974/6975 <https://mygrants.gov.my>

Penyelidik Industri Institusi

Pengumuman Upcoming Event Inovasi

i-WTR (WASTE WATER REACTOR)  
The integrated waste-water



KEMENTERIAN PENGAJIAN TINGGI

JABATAN PENDIDIKAN TINGGI  
KEMENTERIAN PENGAJIAN TINGGI

## **GARIS PANDUAN SKIM GERAN PENYELIDIKAN FUNDAMENTAL (FRGS) (PINDAAN TAHUN 2021)**

BAHAGIAN KECEMERLANGAN PENYELIDIKAN IPT  
JABATAN PENDIDIKAN TINGGI  
KEMENTERIAN PENGAJIAN TINGGI  
ARAS 7, NO. 2, MENARA 2  
JALAN P5/6, PRESINT 5  
62200 W.P. PUTRAJAYA  
No. Tel. : 03-8870 6974/6975  
No. Faks : 03-8870 6867

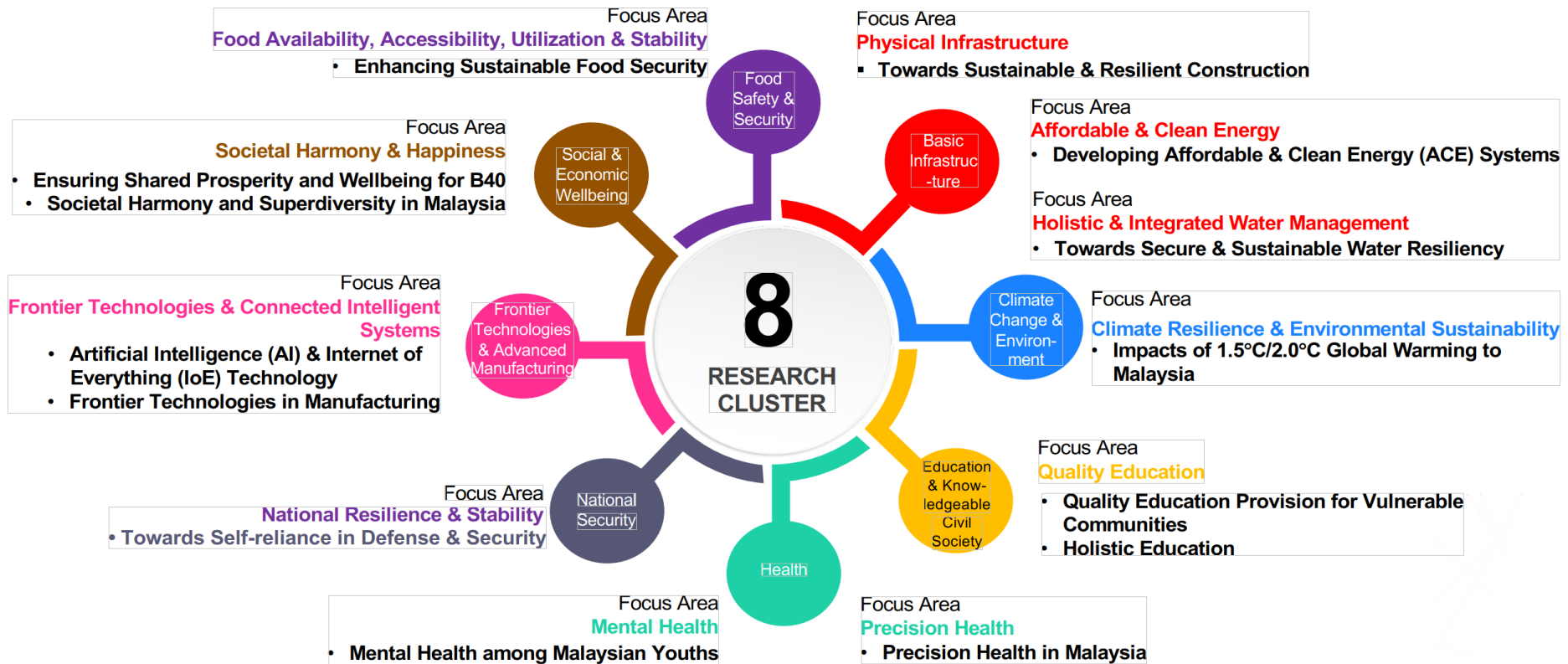
# Introduction

## Impact

Domain, cluster, socioeconomic drivers, key economic growth activities & sustainable development goals

# Introduction

- 7 domain areas
- 8 research clusters



# Proposal Evaluation

- University followed by MOHE
- The measures for **quality** proposal
  - Informative **title**;
  - Convincing **executive summary**;
  - Clear **problem statement**;
  - Provide **scientific background**;
  - Good selection of **research methods**;
  - Realistic** budget and schedule.
  - Deals with solving problem at the fundamental level.



# Proposal Evaluation

## FRGS (Skim Geran Penyelidikan Fundamental)

EVALUATION FORM FUNDAMENTAL RESEARCH GRANT SCHEME (FRGS) (VER. 1/2020)				
SUMMARY OF ASSESSMENT				
Very Poor	Poor	Acceptable	Good	Very Good
1-2	3-4	5-6	7-8	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 TITLE
- 2 EXECUTIVE SUMMARY
- 3 RESEARCH BACKGROUND
- 4 OBJECTIVES
- 5 METHODOLOGY
- 6 EXPECTED RESULT
- 7 TRACK RECORD & COMPOSITION OF TEAM
- 8 QUALITY OF PROPOSAL
- 9 ELEMENT OF FRGS CRITERIA

# Proposal Evaluation

## **A. Title, Keyword**

B. Details of Project Leader

C. Research Information

Duration of Research

Other Researchers

Research Projects

## **Executive Summary**

Detail Planning

### **Problem Statement**

Hypotheses

### **Literature Review**

### **Research Objectives**

### **Methodology**

### **Expected Results**

D. Facilities and Special Resources

E. Budget

F. Declaration

Resume/Brief CV

Appendices

# Writing Guideline

## Title:

- Specific in nature reflecting fundamental issues to be resolved
- Brief and reflects the content of the proposal
- Include “output/contribution”, “method” & “application domain”
- No. of words?

## Are the titles good?

1. Secure-aware multipath routing using atom search rider optimization algorithm in wireless sensor network
2. A collaborative user model using hybrid clustering recommendation methods
3. An enhanced method for software testing.
4. Fuzzy detection system for efficient pedestrian detection in traffic areas
5. Long short term memory technique for monthly rainfall prediction

# Writing Guideline

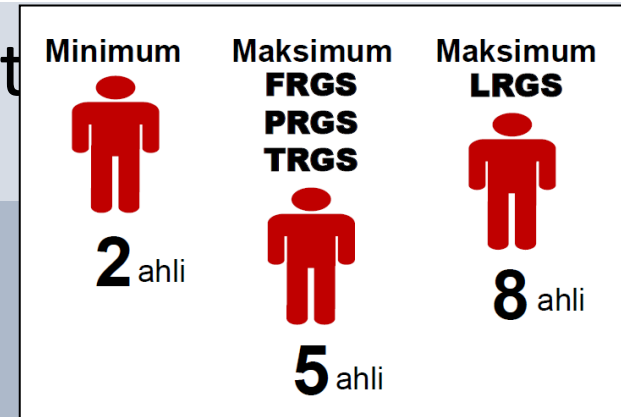
KEYWORDS

- 3-5 keywords
- Unique, long tailed
- How popular?



# Writing Guideline

- Project leader – rank, permanent
- Research duration
- Research team
  - Qualification and rank of researchers
  - Well balanced team
- Current & previous project (leader)
  - Previous research
  - Current FRGS –  $\geq 75\%$
  - Publication



# Writing Guideline

## Executive Summary

- An informative abstract
- Consists of background, problem, objective, method, expected output, implication/significance of output
- No citation, no sub-headings
- Concise & compact
- Abbreviation? Define it when it is used for the 1<sup>st</sup> time

# Writing Guideline

- Problem Statement
  - Description of an issue currently exists which needs to be addressed
  - Focus on scientific problem/issue
  - Supported by citation
- Hypothesis, research question

# Writing Guideline

## Objective

- Specific, Measurable, Achievable, Realistic and within time-frame
- Relate to problem statement/research question

## Methodology

- Clear and detailed description of the methodology
- Describe how work is to be carried out to achieve research objective
- Include research design, flow chart, Gantt chart, and milestones (every 6 months if possible)



# Writing Guideline



- Literature review
  - Elaboration of title
  - Overview main area of research
  - Overview of main theories/models/problems in the research area
  - Lay the broad foundation of the problem
  - Cited most recent (last 5 years) related references
  - In line with government policy, national agenda and global aspiration

# Writing Guideline

## RESEARCH DELIVERABLES

(based on "Call for Proposals" document)



- Kit/diagnostic tool
- System
- Database
- New plant variant
- Equipment
- Instrument
- Policy paper
- Framework
- etc.

## SCHOLARLY OUTPUT



Post-graduate  
(PhD or Masters)

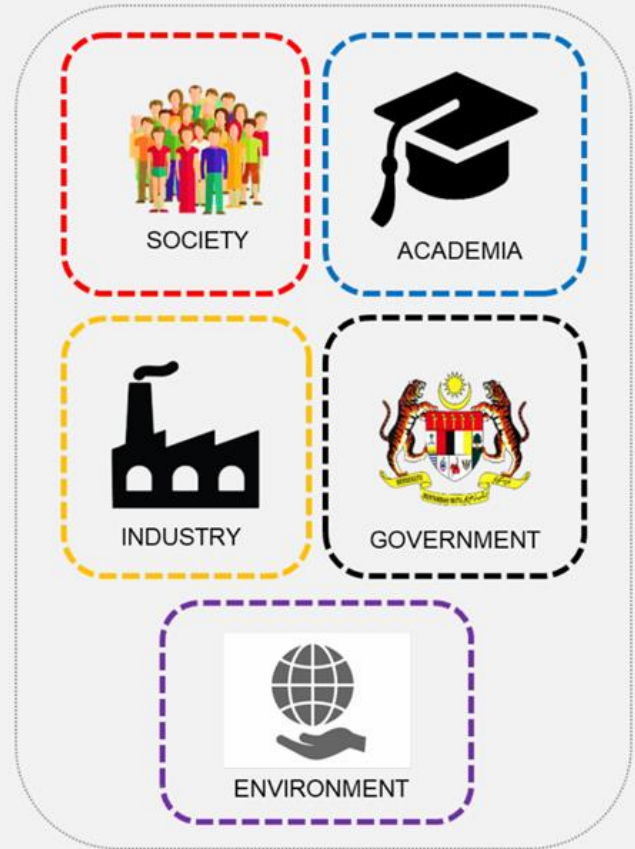


Research  
Publication



Intellectual  
Property

## IMPACTING TO QUINTUPLE HELIX



# Writing Guideline

- Quality of proposal

- Meticulous

- Proper use of language

- Good formatting and presentation

- Elements of FRGS content

- Novelty, cutting edge, high impact

- Can an existing application be used in a new way?

# Budget: $\leq$ RM250,000

- Vote **11000** (salary & wages)
  - RM2500 for PhD & RM2000 for Master
- Vote **21000** (travelling expenses & subsistence)
  - Data collection & meeting within the country
  - Conferences as presenter
  - Lodging, food, flight & taxi fares

## Writing Guideline



# Writing Guideline

- Vote **24000** (rental): building, equipment, transport, etc.
- Vote **27000** (research materials & supplies): chemicals, animals, etc.
- Vote **28000** (maintenance & minor repair): sand, cement, building, lab, equipment, etc.

# Writing Guideline

- Vote **29000** (professional services): printing, paper, honorarium, consultation, training (<3 months), fees
- Vote **35000** (equipment): special equipment (e.g. camera, tape recorder), computer, software

# Patent Search



KEMENTERIAN  
PENDIDIKAN  
MALAYSIA

**JPT** | JABATAN  
PENDIDIKAN  
TINGGI

## SIMPLIFIED PATENT SEARCH REPORT

[using Lens.org (<http://lens.org/>)]

Version 1/2020

<b>Keywords Used</b>	Social media addiction, addiction index, forecasting model, communication model, deep learning	<b>The Number of Patents Found using Keywords Used</b>	0 (refer to snapshot of search result below)
		<b>Link to the Search Result on Lens.org</b>	<a href="https://www.lens.org/lens/search?q=(social%20media%20addiction)%20AND%20(addiction%20index)%20AND%20(forecasting%20model)%20AND%20(communication%20model)%20AND%20(deep%20learning)&amp;l=en&amp;st=true&amp;j=ID&amp;j=MY&amp;j=TH&amp;j=SG&amp;preview=true">https://www.lens.org/lens/search?q=(social%20media%20addiction)%20AND%20(addiction%20index)%20AND%20(forecasting%20model)%20AND%20(communication%20model)%20AND%20(deep%20learning)&amp;l=en&amp;st=true&amp;j=ID&amp;j=MY&amp;j=TH&amp;j=SG&amp;preview=true</a>

# Writing Guideline

**F(i). 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.*

**F(ii). 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)

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

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"/>



- Coming up with research ideas is **NOT** easy
- Be challenged, be curious

# Summary

*Thank you*

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