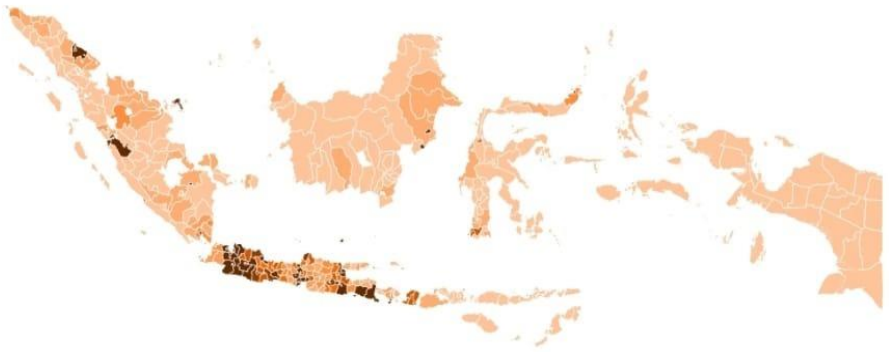
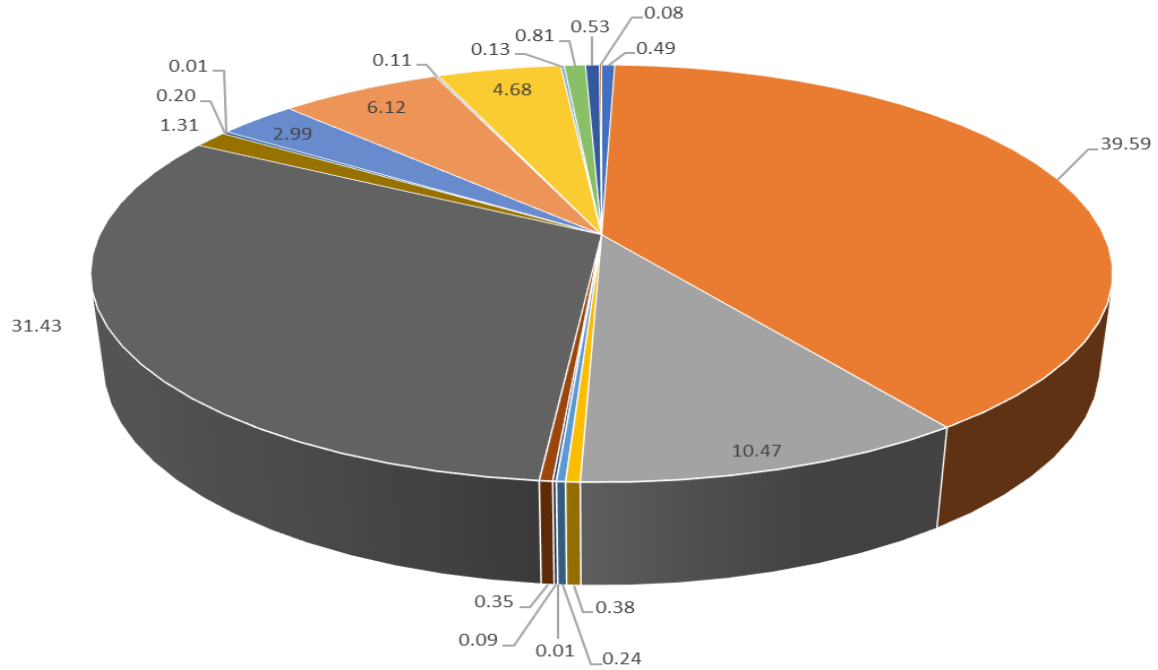
DEVELOPMENT of SMALL MEDIUM ENTERPRISE - GRASSROOT POLICY IN INDONESIA

Arthur Lelono, PhD
Director Talent Management
National Research and Innovation Agency (BRIN)

Jumlah UKM : 82192

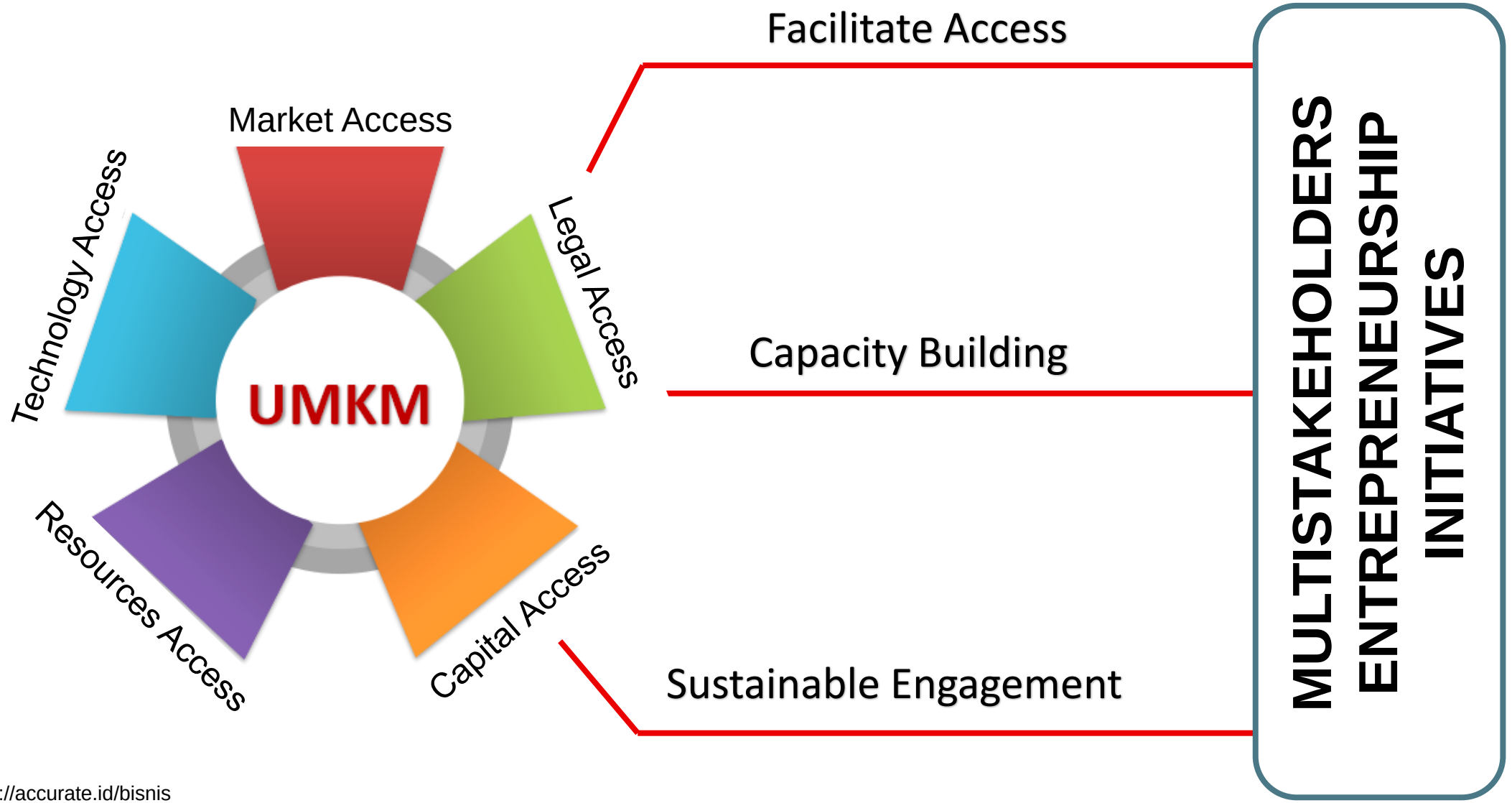


MICRO	(94%)	76,981
SMALL	(6%)	4,787
MEDIUM	(1%)	424



Criteria	Capital	Turnover
Micro	Max. 65.000 USD	Max. 130.000 USD
Small	> 65.000 USD – 320.000 USD	> 130.000 USD – 950.000 USD
Medium	> 320.000 USD - 650.000 USD	> 950.000 USD – 3.200.000 USD

INDONESIA SME BASIC CHALLENGES



Sumber: https://accurate.id/bisnis

GOVERNMENT ROLE IN FOSTERING COMPETITIVE ECOSYSTEM FOR SMALL AND MEDIUM ENTERPRISE

a. Funding;
b. Equipment and Facilities;
c. Integrated business information;
d. Partnership;
e. Business permit;
f. Business Opportunity;
g. Business promotion; dan
h. Institutional support.

Sumber: UU 20/2008

SUPPORTING SYSTEM FOR UPGRADED SME

Regulation & Ecosystem

- Facilitation
- Regulation
- Promotion
- Engagement - Development
- Reward
- Research & Innovation
- Investor
- Distribution
- Suplier
- Mentoring SME
- Distribution
- Network
- Cooperation
- Accelerated
- Publication
- Promotion

BUSINESS INCUBATION

- GOVERMENT
- ACADEMIC
- BISNIS
- COMMUNITY
- MEDIA

SME

ENGAGEMENT

- Technology application
- Mentoring
- Simple finance system, direct and Intellectual property right support.
- **Halal Certification** for household industry based,
- Facilitation in promotion and exhibition

MULTI STAKEHOLDER

INTEGRATED SYSTEM

- FINANCE CREDIT FOR SME
- KEMEPAREKRAF
- KEMENKOPUMKM
- BRIN
- DISTRICT GOVERMENT
- LOCAL UNIVERSITIES

PRODUCTION
Material, design product, legal aspect

- Access of information for material availability
- Modern design product consultation
- **Technical Mentoring Services**
- **Application of technology in product development;**
- Certification and legal aspect

FUNDING
Capital, Accounting, Transaction, Tax regulation

- Simple **finance system** and supporting tax policy
- Simple and supporting specific **distribution way**

MARKETING
supply, distribution, digital marketing, exhibition

- Public and huge exhibition
- Publication through media and online
- Special promotion through digital platform
- Specific distribution services

INTITUTION
business plan, orgnizational, HR

- Mentoring services
- Professional institution – bankable

ADVOCATION
Facilitation of legal support

- Facilitation in law protection
- Easy access legal in intellectual property rights, household industry permit, halal certification

STRONG SME & GLOBAL COMPETITIVENESS

FACILITATION OF SME BUSINESS DEVELOPMENT

a. Production and process;

- Production technique, Management of SME
- Easy access of equipment, production, supporting materials, and packaging
- Standardization of product, production process
- Development of product and production process through engineering

b. Marketing;

- Marketing development strategy;
- Disperse of market information;
- Development of marketing skill;
- Availability of marketing platform
- Supporting of product promotion, distribution network
- Professional consultant service in marketing

c. Human resources

- Entrepreneurship and technopreneurship culture
- Development of technical and managerial skill; training center for SME
- Counseling in business motivational& creativity
- Creation of new business field

d. Design and Technology.

- Development of product design, technology, and quality insurance;
- Development of cooperation in technology transfer;
- Introduce science and new technology at early stage of SME product development;

Sumber: UU 20/2008

Facilitation Support (optional/multi years)

Application of Science Technology

Using BRIN resources in human capital, research infrastructure to support SME and their product development based on scientific approaches and technology applications.

Product Testing Standard

Facilitation on several testing of developed product from SME under certain standard based on national or even international. Several testing is needed before the product enter the market.

Certification Mentoring

Mentoring process as part of quality assurance of developed products until it is being certified by the regulatory agency

Promotion

Promotion of the developed product, focusing in those who has been certified

DIGITAL ERA

Sumber: Lab. Manajemen dan Bisnis FEB UNPAD (April – Mei 2020)

- Transaction system through online media (Social Media, Website, Marketplace)
- Strong and open access digital
- Digital transaction regulation
- Society based system development
- Digital literation skill and agile internet

SME STRATEGIES in the NEW NORMAL ERA

1. **KNOWING THE MARKET**
2. **DIFFERENTIATE PRODUCTs**
3. **COMMUNICATE PRODUCT SUPERIORITY**
4. **USING DIGITAL PLATFORM**

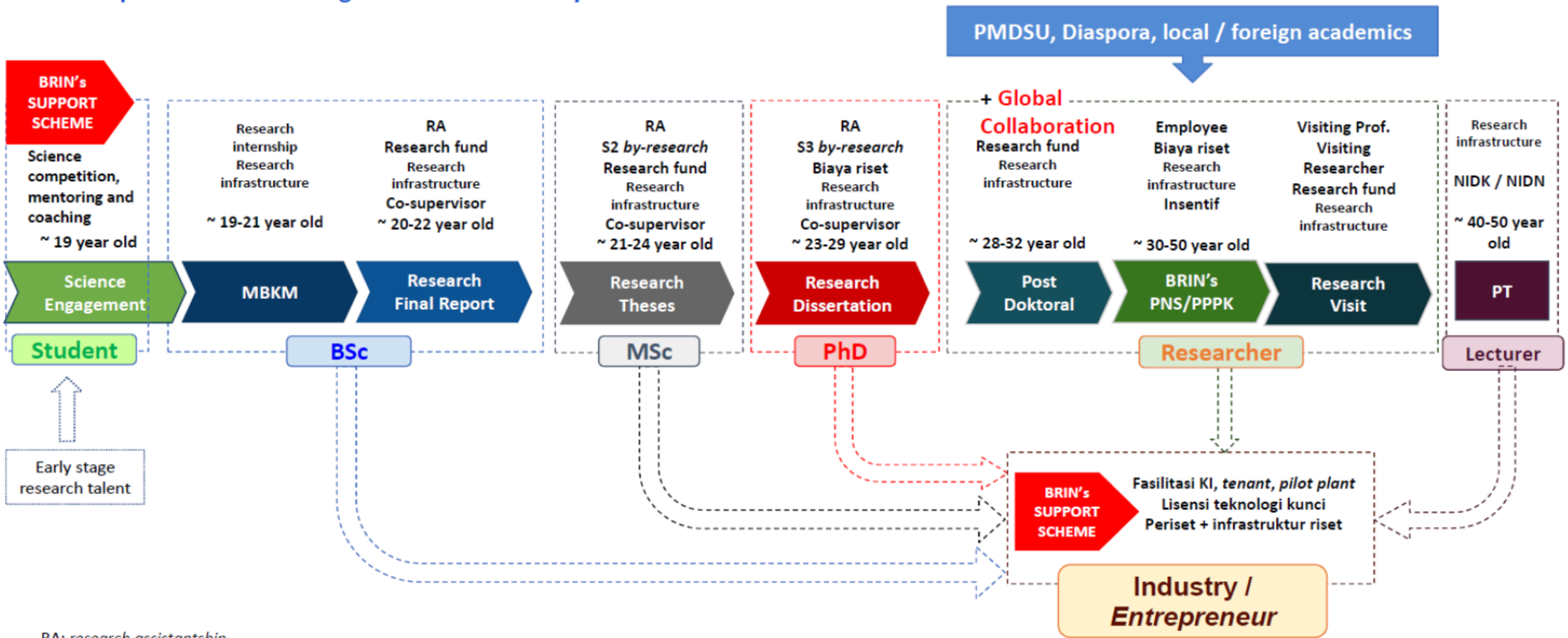
Manajemen Talenta Riset & Inovasi

BerAKHLAK
Berorientasi Pelayanan Akuntabel Kompeten
Harmonis Loyal Adaptif Kolaboratif

BRIN
BADAN RISET DAN INOVASI NASIONAL

National Talent Management in research and innovation

Basic platform to encourage researcher mobility



RA: *research assistantship*

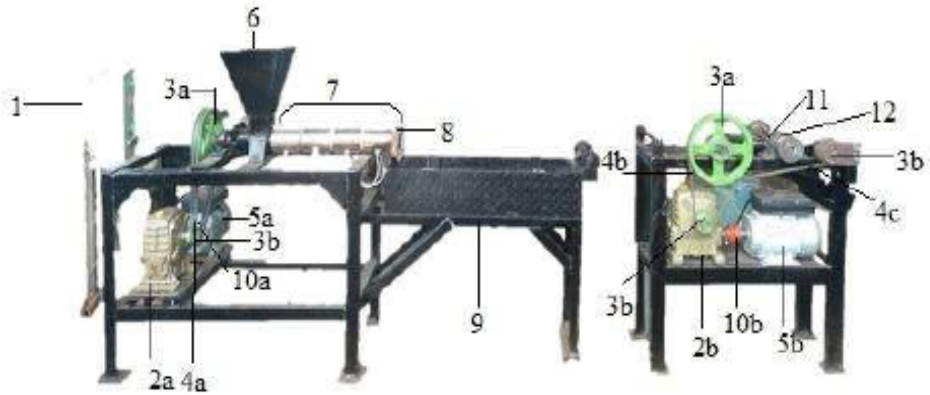
ROTA (Robot Tanaman/Plant Robot)
Angel Anlee - SMA Tarakanita 2
Juara 1 NYIA 2021 & Gold Medal IEYI 2022

International Exhibition for Young Inventors (*IEYI*) Gold Medalist 2022

ROTA (Robot Tanaman) is a smart robot that will make gardening easier. ROTA can help us grow our plants to solve the global warming issues by reducing CO^2 emissions that are happening widely in this world. If we all have at least one plant in each of our houses, we surely can solve the global warming and climate changes issues. But not everyone can take care of their plants. With ROTA, we can grow our plants with no worries. ROTA will take care of your plants for you. ROTA will tell you every information that is needed for gardening.

For some people, gardening might be something that is boring, especially when we compare it with having pets, people tend to choose to get a dog or a cat than a plant. But with ROTA, gardening is no longer "boring." ROTA makes our plants more "alive." You can control ROTA with your own voice. You can even talk to it or even text ROTA with ROTA App's features. ROTA could also display your plant's condition through its expression (emoticons). Of course, this will make gardening more interesting and fun. ROTA also supports the using of green energy by using solar energy. ROTA is also made from recyclable materials which makes this device sustainable.

Extrusion Machine: Production of Polyester Chips from PET Bottle Waste as Raw Materials Synthetic Fibers
Orchidia Ummu Tazkiah - SMA Negeri 1 Kaliwungu
Juara 2 NYIA 2021 & Gold Medal IEYI 2022



Polyethylene terephthalate plastic bottle waste has a long chain so it is difficult to decompose and accumulate. Demand for *polyester chips* among the textile industry is increasing. Researcher has an innovation in the form of *polyester chips* with raw materials for PET plastic bottle waste which is processed through *an extrusion* machine. *Polyester chips* are a form of *polyester* polymer in the form of solids. *Extrusion* is the process of material melting due to heat from the outside and heat. The purpose of this study is to find out: 1) Proses processing pet plastic bottle waste into *polyester chips*. 2) Proses testing *polyester chips*. 3) Utilization of *polyester chips*. Researchers produce 3 types of *polyester chips*, namely: 1) *Optical Brightener*; 2) *Cationic Dyeable Polyester*; 3) *Semi-Dull*. Researcher used 3 samples with 3 repetitions for each *polyester chip* with different additives. Research methods used experimentally and descriptive-quantitatively. The manufacturing process of *polyester chips* through *the extrusion* machine: 1) The melting process; 2) Cooling process; 3) Cutting process. The results that are close to the test standard are: 1) Size analysis: OB A1: 33 g/pcs, CDP A3: 32 g/pcs, SD A2: 32 g/pcs; 2) Water content analysis: OB A1: 0.317%, CDP A3: 0.315%, SD A2: 0, 335%. 3) Ash content analysis: OB A1: 0.327%, CDP A3: 0.327%, SD A2: 0.326%. 4) Intrinsic viscosity analysis: OB A1: 0.64 dl/g, CDP A3: 0.62 dl/g, SD A2: 0.64 dl/g. 5) Spot analysis: OB A1: 0.12 3%, CDP A3: 0.126%, SD A2: 0.126%. *Polyester chips* produced are used as material for making *polyester* yarn or used as practical test materials for Vacational High School students.

Keywords: PET plastic bottle waste, Extrusion, Polyester Chips.

STUMO (Student Monitoring) Wristband

Maximus Quinn Hertada dan Fadlan Raya Effendi – SMPN 5 Yogyakarta

Juara 2 NYIA 2021 & Bronze Medal IEYI 2022

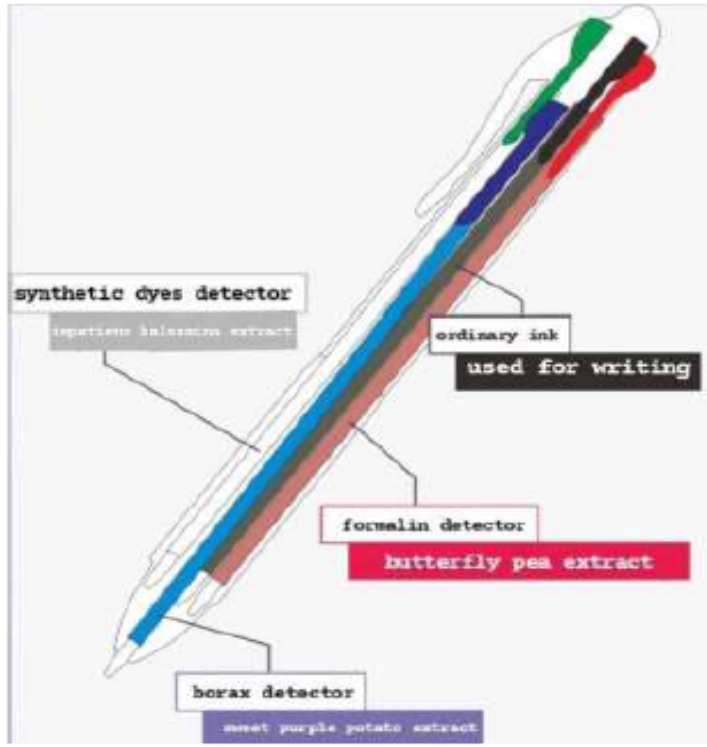
STUMO Wristband stands for Student Monitoring wristband. This device is a wristband that can be used to monitor health. Using one device, STUMO Wristband can measure the user's body temperature, heart rate, and blood oxygen level. Checked data will be sent to the server computer via a wifi connection every minute at a speed of less than 1 second. After the server computer receives the data, the officer can check the student's health data according to the student registration number. From the screen output, it can be seen if there are students in unhealthy conditions. Since this device sends location data to the server, the computer will show whether there is a crowd in a specific location. The officer will remind students to keep health protocol if there is a crowd.

STUMO Wristband helps monitor students' health quickly and automatically on a large scale. With this device, we can minimize the spread of diseases that are widely spread. The aspects that STUMO measured are the factors that are usually a sign of most diseases. It will be beneficial to apply in schools as a device to maintain the health protocol without disturbing the learning process. STUMO Wristband is very accurate if we compare it with other REI standard devices mainly used as a health monitoring device. With an accuracy of 98.52%, STUMO Wristband is a relevant device for doing a health check automatically and rapidly. The web system from STUMO Wristband also helps monitor health conditions and crowds of users efficiently and quickly to achieve environmental health.

DETECTIVE PEN

Ginaris Sekar Arum Pinasti dan Almas Fauziyah – MAN 2 Kudus

Juara 2 NYIA 2020 dan Gold Medal IEYI 2021



The detective pen is an innovation to detect substances that prohibited in food such as borax, formalin, and synthetic colors in food and beverages. This is one-of-a-kind in product that comprises three test kits in a single pen. We utilize natural substances that are readily available in our region; after completing numerous laboratory tests, we discovered three primary components, each of which can be used to detect borax, formalin, and synthetic colors. Using sweet purple potato, butterfly pea, and impatiens balsamina as reagents to detect the presence of dangerous chemicals, we've created an ecofriendly product.

CLIMBCATION (Climbers communication device without pulses and network to support safety climbing activities and increase the recreation sector.)
Muhammad Lutfi Usman dan Ratna Juwita Salensehe – SMA Averos
Juara 3 NYIA 2020 & Silver Medal IEYI 2021

CLIMBCATION is an Arduino Wireless-based toll-free communication tool for climbers. We use the Wireless Serial Port HC12 communication module as a communication module in this device so that all types of data sent do not require pulses or networks. ***CLIMBCATION*** consists of two core devices, namely a wrist-mounted messaging device, and a GPS device that is free to use anywhere. In addition, there are several other supporting devices, namely routers that are useful for capturing and distributing data between devices so that data can be sent remotely. Moreover, there is a server device located at the climbing post as a data reception center. When the user presses the emergency button, it will automatically sound the indicator alarm and the position coordinate data from the GPS will be sent to the server device at the climbing post, the incoming longitude and latitude will be converted so that it appears on the map view and can be seen where the climber's location is.

LINUS NARA PRADHANA
Participate as The Finalist National Young Innovation Award 2012 when he was 6th Grade of elementary school.
Innovation : Cooling System in Helmet
His Innovation was bought by a Helmet Company (AVS), and he earns royalty.

BRIN
BADAN RISET
DAN INOVASI NASIONAL

TERIMA KASIH

សូមអរគុណ

Thank You

Gedung B.J. Habibie
Jl. M.H. Thamrin 8, Jakarta 10340, Indonesia

www.brin.go.id Brin Indonesia @brin_indonesia @brin.indonesia