



# MOHD MUSTAFA AWANG KECHIK

My research focuses on High Temperature Superconductor (HTS) materials through our research grants and through our collaborations with other universities, international laboratories and industries. My work mainly focuses on flux pinning properties in High HTS films and bulks. I am also a member of Institute of Physics, London, and Fellow of Malaysian Solid State Science and Technology Society (FMASST).

## RESEARCH PROFILE

Current Position : Associate Professor  
Expert : Superconductor :  
H-Index 13(Scopus)16 (GS):  
Total Citation 515(Scopus)715(GS)  
updated 280723

## CONTACT



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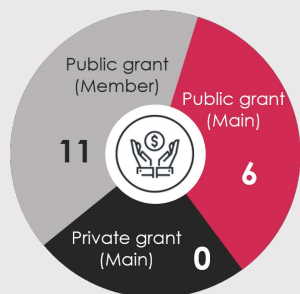
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## RESEARCH INPUT

18 Research Grant RM 1.57 M



Total Funding as Project Leader RM 460K

## RESEARCH OUTPUT

95 Articles in journal, 31 Senior Author  
2 Chapters in Book

## EDUCATION

### Post Doctoral

University of Birmingham, UK

### PhD (Superconductor)

University of Birmingham, UK

### Master of Science (Superconductor)

The National University of Malaysia

### Bachelor of Science (Hons.) in Physics

Universiti Putra Malaysia

## ACHIEVEMENT & AWARDS

### ERASMUS+KA17 EU International Credit Mobility Award 2022

University of Minho, Portugal

### Excellent Service Award 2022

Universiti Putra Malaysia

### Sakura Science Program, JST MEXX Japan 2020

Nagoya Institute of Technology, Japan

### Gold Medal at International Putra InnoCreative Teaching & Learning PICTL 2020

Students' Soft Skills and Knowledge Development Through Academic Mobility

### Gold Medal at Materials Technology Challenges (MTC 2020)

The invention of The Effect of Graphene Nano Particle Addition on Bi-2223 Superconducting Properties Prepared via Co-Precipitation Method

### Best Innocreative Educator Award at International Putra InnoCreative Teaching & Learning PICTL 2019

Physics 5.0: Connecting The Dots Moulding Towards Functional Physics Graduates

### Excellent Service Award 2017

Universiti Putra Malaysia

### Postdoctoral Research Fellow 2014-2016

School of Electrical, Electronic & System Engineering, University of Birmingham, UK

### Silver Medal at International Invention Innovation Industrial Design ITEX 2006

The Invention of Improvement Critical Current Density of BSCCO 2223 Tape

## REVIEWER/EDITOR

2016 Putrajaya International Built Environment, Technology and Engineering Conference

2016 Applied Superconductivity Conference, USA

2016 The 5th International Conference on Solid State Science and Technology (ICSSST 2015)

2018 Book of Physics, UPM Press

2018, 2022 ASM Science Journal

2019 International Journal of Nanoelectronics & Materials

2019 Journal of Physics and Chemistry of Solids

2020 Sains Malaysiana Journal

2020 Journal of Molecular Physics

2021 IEEE Transactions on Applied Superconductivity

2021 Ceramic International Journal

2023 Materials

2022 Applied Sciences

## TEACHING EXPERIENCE

PHY3302 Digital Electronics  
PHY3105 Modern Physics  
PHY3103 Physics I  
PHY2001 General Physics  
PHY4206 Metal and Alloy  
PHY4205 Ceramics and Polymer  
PHY4402 Modern Optics  
PHY4203 Material Science  
PHY3304 Principle of Measurement System  
PHY3104 Physics II  
PHY4204 Analytical Methods of Structure & Microstructure  
PHY4208 Superconductor  
FCE3204 Thinking Skills  
PHY4903 Industrial Training, PHY4207 Materials Tech Processing  
PHY5203 Physics of Thin Films

## CONFERENCES/SEMINAR (PRESENTED PAPERS/POSTERS)

M. M. Awang Kechik, P. Mikheenko, J.S. Abell, I. A. Crisan, H. Baqiah, S.K. Chen, K.P. Lim and A. H. Shaari. Flux Pinning Mechanisms of YBCO thick films by BZO nano inclusion. World Congress on Applied Nanotechnology 24-26 Nov. 21 Erzurum, Turkey.

M. M. Awang Kechik, S.A. Halim, S. K. Chen and K. P. Lim. Increased critical current density and pinning force in  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  thick films by  $\text{BaZrO}_3$  nano inclusions. The International Conference Science Physics and Education 2021, 10-11 Sep. 2021 Lombok, Indonesia.

M. M. Awang Kechik, S.A. Halim, S. K. Chen and K. P. Lim. Increased Critical Current Density and Pinning Force in  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  Thin Films by Nano Inclusions. International Symposium on Superconducting, Magnetic and Energy Materials (ISSM 2020) 6-7 Oct. 2020 Tokyo, Japan

M. M. Awang Kechik, P. Mikheenko, J.S. Abell, I. A. Crisan, H. Baqiah, S.K. Chen, K.P. Lim and A. H. Shaari. Optimization of superconducting properties of  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  films grown by pulsed laser deposition. 4<sup>th</sup> Padjadjaran International Physics Symposium 13-14 Nov 2019 Bandung, Indonesia.

M.M. Awang Kechik, S.A. Halim, S. K. Chen and K. P. Lim. Application of Superconductor on Empowering Agriculture 4.0. Seminar on Agriculture and Green Technology, AgTech2019, 5<sup>th</sup> April 2019, Bandung, Indonesia.

N.A. Che Dzul-Kifli, M. M. Awang Kechik, S.A. Halim, S. K. Chen and K. P. Lim. Fabrication and Characterization of  $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$  Superconductor by Thermal Treatment Method with Addition of  $\text{BiFeO}_3$  nanoparticle. Proceeding of International Fundamental Science Congress on 23 – 24 Oct 2018, RHR Hotel @ UNITEN, Kajang, Selangor.

M.M. Awang Kechik, P. Mikheenko, D. Cardwell, N.H. Babu, J.S. Abell, I.A. Crisan 2013. Increased critical current density and pinning force in YBCO thin films by  $\text{Gd}_{2411}$  nano inclusions. Proceeding of International Conference on Nanoscale 2013, Sep. 2013, Istanbul, Turkey

P. Mikheenko, V-S Dang, M.M. Awang Kechik, J. S. Abell and A. Crisan. Magnetic field-controlled anisotropy of critical current in nano-engineered  $\text{YBa}_2\text{Cu}_3\text{O}_x$  films. Applied Superconductivity Conference 2010.

M.M. Awang Kechik, P. Mikheenko, A. Sarkar, V. S. Dang, N. Hari Babu, D. A. Cardwell, J. S. Abell and A. Crisan. Increased pinning force in  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  thin films by  $\text{Gd}_2\text{Ba}_4\text{CuWO}_y$  nano inclusions. 9<sup>th</sup> European Conference on Applied Superconductivity 2009, Dresden, Germany

M. M. Awang Kechik, P. Mikheenko, N. Hari Babu, D. A. Cardwell, P. Paturi, H. Huhtinen, J.S. Abell and A. Crisan. Artificial pinning centres in superconducting films induced by secondary phase nano-inclusions. European Summer School on Superconductivity, Grenoble, France 2009.

M. M. Awang Kechik, P. Mikheenko, N. Hari Babu, D. A. Cardwell, J.S. Abell & A. Crisan, Artificial Pinning Centres in  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$  Thin Films by  $\text{Gd}_2\text{Ba}_4\text{CuWO}_y$  Nano-Inclusions. International Conference on Superconductivity and Magnetism 2008, Ankara, Turkey (IOP,UK)

M. M. Awang Kechik, P. Mikheenko, N. Hari Babu, D. A. Cardwell, J.S. Abell & A. Crisan. Improvement of critical current density in  $\text{YBa}_2\text{Cu}_3\text{O}_x$  films deposited from a melt-growth target. Condensed Matter Material Physics 2008, Royal Holloway, London (IOP,UK)

## CONSULTANCY PROJECT

- 2018-present: Head of UPM-Anton Paar Interim Lab
- 2012-2013: British Aerospace Engineering Outreach Program