nanoSkunkWorkX team selected as finalists for the 2020 MIT Solve Global Challenge: Health Security & Pandemics category, with _Hybrid Rapid Test Kit for SARS-CoV-2_ Proposal

13 Sep 2020
Kuala Lumpur, Malaysia

Dr Amani Salim leads the ***nanoSkunkWorkX*** team to develop the world's first nanotechnology-powered rapid diagnostic kit using saliva for detecting SARS-CoV-2 to diagnose COVID19. The ***nanoSkunkWorkX***'s ***Hybrid Rapid Test Kit for SARS-CoV-2*** proposal has been selected as one of 15 finalists (and the sole diagnostics-based solution) worldwide for the Health Security and Pandemic category in the MIT Solve 2020 Global Challenges competition.

A record total of over 2,600 solutions from 135 countries were submitted, out of which 90 were selected across 6 categories to present at the Virtual Solve Challenge Finals on September 29, 2020 where over USD $2mm of prize money will be awarded to selected Solver teams.

Dr Amani and team (including key collaborators at the International Islamic University of Malaysia, IIUM) have designed a low-cost (targetted to cost less than USD 1 per test), portable, scalable, foolproof, and fast method for detecting SARS-CoV-2. We aim to make RT-PCR obsolete for the COVID19 war by doing away with the reliance on vulnerable and expensive imported reagent supplies, as well as labour-, energy-, and resource-intensive and immobile molecular diagnostics facilities.

nanoSkunkWorkX's technology delivers crucial capability especially in low/middle income countries (LMIC) with weaker public health systems, while still delivering high performance (simulated performance 95%++ specificity / sensitivity with LoD of 5 viral copies per uL based on *in silico* computational molecular modelling). This is achieved using innovative technologies to embed 3D-graphene structures within ***nanoSkunkWorkX***'s ***nano-engineered Sensor Dot*** (***nSD***) technology, applying electrochemical sensing techniques evolved from Dr Amani's work at NASA with the SporeSat project as well as proprietary molecular assembly techniques developed in Malaysia. Her earlier work that led to innovations pioneered in SporeSat won her the Thora Halstead Young Investigator Award in 2012.

We invite all Malaysians to vote in support of our submission for the Community Prize on top of the primary Solver Funding Prizes in contention.

Dari NASA ke Bumi !

Majulah Sains untuk Negara !

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About MIT Solve: Solve is an initiative of the Massachusetts Institute of Technology (MIT) with a mission to solve world challenges. Solve is a marketplace for social impact innovation. Through open innovation Challenges, Solve finds incredible tech-based social entrepreneurs all around the world. Solve then brings together MIT's innovation ecosystem and a community of Members to fund and support these entrepreneurs to help them drive lasting, transformational impact.

MIT Solve members include (but are not limited to) The Bill & Melinda Gates Foundation, Abu Dhabi Crown Prince Court, Alfred P. Sloan Foundation, DBS Foundation, General Motors, HP, MetLife, Nike, Olam International, Oxford Sciences Innovation, Queen Rania Foundation, Uber, United Nations Environment Programme, The World Bank Group, and Yum! Brands.

About *nanoSkunkWorkX*: *nanoSkunkWorkX* is a Malaysian "deep-technology" startup focused on delivering radical nanotechnology-driven innovations in healthcare, energy, and advanced materials to solve global-scale problems by bringing together experts in science & technology, as well as business, strategy & finance, applying a focused, lean, and agile R&D and go-to-market approach inspired by the original Lockheed Skunk Works in the US.

***nanoSkunkWorkX Leadership*:**

Dr Amani Salim, Chief Technologist and Scientist (amanisalim.com) is a leading multidisciplinary engineer and researcher, project manager, and educator with a background in nanotechnology, biomedical, electrical, and materials engineering. She is a passionate and engaging public speaker for youth and STEM engagement, addressing varied audiences such as K-12 students and corporate and government bodies. Dr Amani thrives under pressure with proven delivery and execution experience in time-sensitive, mission-critical projects, and has worked with projects under domain- leading organizations such as NASA, National Institute of Health (NIH), and Environmental Protection Agency (EPA), USA. Now driving sustainable radical innovation in Malaysia with a view towards global impact.

On Twitter @kenisalim

Iqbal Shamsul, CEO is an MIT-trained, former Wall Street energy trader and investment banker, now focusing on out-of-the-box and impactful market-driven solutions in healthcare, energy, deep tech, and social enterprise. Currently CEO and Founder of two start-ups in Malaysia: one working to deliver next-gen nanotech-powered biosensors for medical and other applications, and the other mobilizes spare capacity in the healthcare sector to address supply-demand mismatches across public and private sectors and optimizes healthcare system utilization and health outcomes.

On Twitter @iqbalshamsul

Team information as attached.

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Online Resources:

1. **Dr Amani Salim website:** www.amanisalim.com

2. **Hybrid Rapid Test Kit for SARS-CoV-2 (at MIT Solve)**
   https://solve.mit.edu/challenges/health-security-pandemics/solutions/24787

3. **MIT Solve Health Security and Pandemic Challenge**
   https://solve.mit.edu/challenges/health-security-pandemics/custom/prizes#challenge-subnav-offset

4. **MIT Solve Categories**
   https://solve.mit.edu/challenges

5. **Virtual Solve Challenge Finals**
   https://solve.mit.edu/events/solve-challenge-finals-2020

6. **International Islamic University Malaysia**
   https://www.iium.edu.my/

7. **NASA SporeSat Project**:
   https://www.nasa.gov/centers/ames/engineering/projects/sporesat.html

8. **Thora Halstead Young Investigator in 2012:**
   https://www.nasa.gov/mission_pages/station/research/news/asgsr_2012.html

9. **Solver Funding Prizes:**
   https://solve.mit.edu/challenges/health-security-pandemics/custom/prizes

10. **About MIT Solve:** http://solve.mit.edu

11. **MIT Solve Members:** https://solve.mit.edu/members

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