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Ministry of Defence

DRDO develops sanitisation enclosures and face shields to save primarily healthcare professionals from COVID-19

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In the ongoing efforts against COVID-19 pandemic, Defence Research and Development Organisation (DRDO) has been using scientific endeavours to develop products in an accelerated manner. The DRDO laboratories are working with industry partners for volume production.

Personnel Sanitisation Enclosure (PSE)

Vehicle Research Development Establishment (VRDE), Ahmednagar, a DRDO Laboratory has designed full body disinfection chamber called as PSE. This walk through enclosure is designed for personnel decontamination, one person at a time. This is a portable system equipped with sanitiser and soap dispenser. The decontamination is started using a foot pedal at the entry. On entering the chamber, electrically operated pump creates a disinfectant mist of hypo sodium chloride for disinfecting. The mist spray is calibrated for an operation of 25 seconds and stops automatically indicating completion of operation. As per procedure, personnel undergoing disinfection will need to keep their eyes closed while inside the chamber.

The system consists of roof mounted and bottom tanks with a total of 700 liters capacity. Approximately 650 personnel can pass through the chamber for disinfection until the refill is required.

The system has see-through glass panels on side walls for monitoring purpose and is fitted with lights for illumination during night time operations. A separate operator cabin is provided to monitor overall operations.

The system has been manufactured with the help of M/s D H Ltd, Ghaziabad, within a time span of four days. This system can be used for disinfection of personnel at the areas of controlled ingress and egress such as entry and exit to hospitals, malls, office buildings and critical installations.

Full Face Mask (FFM)

Research Centre Imarat (RCI), Hyderabad and Terminal Ballistics Research Laboratory (TBRL), Chandigarh, have developed face protection mask for health care professionals handling

COVID-19 patients. Its light weight construction makes it convenient for comfortable wear for long duration. This design uses commonly available A4 size Over-Head Projection (OHP) film for face protection.

The holding frame is manufactured using Fused Deposition Modeling (3D printing). Polylactic Acid filament is used for 3D printing of the frame. This thermoplastic is derived from renewable resources such as corn starch or sugarcane and is biodegradable. The face mask will be mass produced using injection moulding technique for volume production.

One thousand face shields are being produced daily in TBRL and provided to Postgraduate Institute of Medical Education and Research (PGIMER), Chandigarh. Similarly 100 are produced at RCI and these have been handed over to Employees' State Insurance Corporation (ESIC), Hyderabad. A demand of 10,000 shields has been received from PGIMER and ESIC Hospitals based on successful user trials.

https://pib.gov.in/PressReleseDetail.aspx?PRID=1611116

DECCAN HERALD

Sun, 05 April 2020

DRDO maintains anti-coronavirus tech innovations with two inventions

DRDO said that the system was manufactured with the help of Dass Hitachi Ltd in just four days

By Akhil Kadidal

Maintaining its record of innovative new technologies to combat coronavirus, the Defense Research and Development Organisation (DRDO) unveiled a full-body disinfection chamber and a full face mask for medical staff handling affected patients on Saturday.

The full body disinfection chamber, which was developed by the DRDO lab, VRDE, in Ahmednagar, is designed as a walk-through decontamination chamber.

"This is a portable system equipped with sanitizer and soap dispenser. The decontamination is started using a foot pedal at the entry. On entering the chamber, an electrically operated pump creates a disinfectant mist of hypo sodium chloride for disinfecting," DRDO said.

The mist spray is calibrated for operation of 25 seconds and stops automatically indicating completion of operation. As per procedure, personnel undergoing disinfection will need to keep their eyes closed while inside the chamber.

The system consists of roof mounted and bottom-placed tanks with a total of 700 liters capacity. Approximately 650 personnel can pass through the chamber for disinfection until the refill is required. A separate operator cabin is provided to monitor overall operations.

DRDO said that the system was manufactured with the help of Dass Hitachi Ltd in just four days. This system can be used for disinfection of personnel at the areas of controlled ingress and egress such as entry and exit to hospitals, malls, office buildings and critical installations.

Face Mask

Meanwhile, a DRDO lab in Hyderabad and another in Chandigarh have developed a lightweight face protection mask for healthcare professionals handling COVID-19 patients.

The face mask will be mass-produced using an injection moulding technique for volume production. A demand of 10,000 units has been received from PGIMER and ESIC Hospitals.

https://www.deccanherald.com/city/top-bengaluru-stories/drdo-maintains-anti-coronavirus-tech-innovations-with-two-inventions-821483.html

INDIA TODAY

Sun, 05 April 2020

Coronavirus in India: DRDO designs sanitisation chamber, special face mask

Vehicle Research and Development Establishment (VRDE), Ahmednagar, a DRDO laboratory has designed a full-body disinfection chamber called Personnel Sanitization Enclosure. This walkthrough enclosure is designed for personnel decontamination, one person at a time

By Manjeet Singh Negi

New Delhi: In the ongoing efforts against the coronavirus pandemic, Defence Research and Development Organisation (DRDO) has been using scientific endeavors to develop products in an accelerated manner. The DRDO laboratories are working with industry partners for volume production of special face masks and personal sanitisation chambers.

Personnel Sanitization Enclosure

Vehicle Research and Development Establishment (VRDE), Ahmednagar, a DRDO laboratory has designed a full-body disinfection chamber called Personnel Sanitization Enclosure. This walkthrough enclosure is designed for personnel decontamination, one person at a time. This is a portable system equipped with sanitizers and soap dispenser.

The decontamination is started using a foot pedal at the entry. Upon entering the chamber, an electrically operated pump creates a disinfectant mist of hypo sodium chloride for disinfecting. The mist spray is calibrated for the operation of 25 secs and stops automatically indicating the completion of the operation.

As per the procedure, personnel undergoing disinfection will need to keep their eyes closed while inside the chamber. Approximately 650 personnel can pass through the chamber for disinfection until a refill is required.

The system has seen-through glass panels on sidewalls for monitoring purposes and is fitted with lights for illumination during night time operations. A separate operator cabin is provided to monitor overall operations.

The system has been manufactured with the help of M/s Dass Hitachi Ltd, Ghaziabad, within a time span of four days. This system can be used for the disinfection of personnel in the areas of controlled ingress and egress such as entry and exit to hospitals, malls, office buildings, and critical installations.

Face Masks

RCI, Hyderabad and TBRL, Chandigarh, have developed face protection masks for health care professionals handling the Covid-19 patients. Its lightweight makes it convenient for comfortable wear for long durations. This design uses commonly available A4 size Over-Head Projection (OHP) film for face protection.

The holding frame is manufactured using Fused Deposition Modeling (3D printing). The polylactic acid filament is used for 3D printing of the frame. This thermoplastic is derived from renewable resources such as corn starch or sugarcane and is biodegradable. The face mask will be mass-produced using an injection molding technique for volume production.

A hundred face shields are being produced daily in TBRL and provided to PGIMER, Chandigarh. Similarly, 100 are produced at RCI and have been handed over to ESIC, Hyderabad.

Demand for 10,000 Nos. has been received from PGIMER and ESIC Hospitals based on the successful user trials.

https://www.indiatoday.in/india/story/coronavirus-in-india-drdo-designs-sanitisation-chamber-special-face-mask-1663404-2020-04-05

Live हिन्दुस्तान .com

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डीआरडीओ ने बनाए पर्सनल सैनेटाइजेशन एन्क्लोजर और फेस प्रोटेक्शन मास्क, जानें क्या है खास बात

कोविड-19 महामारी पर अंकुश लगाने के लिए चल रहे प्रयासों में, रक्षा अनुसंधान और विकास संगठन (डीआरडीओ) ने एक पूरे शरीर के आकार के बराबर सैनिटाइजेशन एन्क्लोजर और फेस प्रोटेक्शन मास्क बनाया है। फेस प्रोटेक्शन मास्क की आपूर्ति अब थोक में अस्पतालों में की जा रही है। अहमदनगर में वाहन अनुसंधान और विकास प्रतिष्ठान, डीआरडीओ प्रयोगशाला ने पूर्ण शरीर को कवर कर सकने वाला कीटाणुशोधन चैंबर डिजाइन किया है जिसे पर्सनल सेनिटाइजेशन एन्क्लोजर कहा जा सकता है।

डीआरडीओ ने कहा, "यह एन्क्लोजर एक बार में एक व्यक्ति का परिशोधन करने के लिए बनाया गया है। यह एक पोटेर्बल सिस्टम है जो सैनिटाइजर और सोप मशीन से लैस है।"इसमें प्रवेश करने पर एक पैडल का उपयोग करते हुए पैर का परिशोधन शुरू किया जाता है। फिर कक्ष में प्रवेश करने पर, बिजली से चलने वाले पंप कीटाणुनाश करने के लिए हाइपो सोडियम क्लोराइड की एक कीटाणुनाशक धुंध बनाता है। यह धुंध स्प्रे 25 सेकंड के ऑपरेशन के लिए कैलिब्रेट किया जाता है और फिर खुद ऑपरेशन पूरा होने का संकेत देता है।

इस प्रक्रिया के अनुसार, कीटाणुशोधन से गुजरने वाले कर्मियों को चैम्बर के अंदर रहते हुए अपनी आंखें बंद रखनी जरूरी होती है। डीआरडीओ ने कहा, "इस प्रणाली का निमार्ण गाजियाबाद में डास हिताची लिमिटेड की मदद से चार दिनों में किया गया है। इस प्रणाली का उपयोग लोगों को कीटाणुमुक्त करने के लिए किया जा सकता है, जैसे कि अस्पतालों, मालों, कायार्लय और अन्य महत्वपूर्ण जगहों के प्रवेश और निकास द्वार पर।"

इसके अलावा, हैदराबाद के रिसर्च सेंटर इमरत और चंडीगढ़ के टर्मिनल बॉलिस्टिक्स रिसर्च लेबोरेटरी (TBRL) ने कोविड -19 रोगियों को देखरेख में लगे स्वास्थ्य कर्मियों के लिए फेस प्रोटेक्शन मास्क विकसित किया है। इसका वजन कम होने के कारण इसे ज्यादा देर तक आसानी से पहना जा सकता है। इसका डिजाइन चेहरे की सुरक्षा के लिए आमतौर पर उपलब्ध अ4 आकार के ओवर-हेड प्रोजेक्शन (ओएचपी) फिल्म का उपयोग करता है। डीआरडीओ ने कहा, "होल्डिंग फ्रेम का इस्तेमाल फ्यूजन डिपोजिट मॉडलिंग (3 डी प्रिंटिंग) के जरिए किया जाता है। फ्रेम की 3 डी प्रिंटिंग के लिए पॉलीलैक्टिक एसिड फिलामेंट का इस्तेमाल किया जाता है।"

https://www.livehindustan.com/health/story-drdo-creates-personal-sanitization-enclosure-and-face-protection-mask-3128497.html

दैनिक जागरण

Sun, 05 April 2020

डीआरडीओ ने विकसित किया डिसइंफेक्शन चैंबर, पूरा शरीर हो जाएगा कीटाणुरहित

कोरोना वायरस से लड़ने के लिए रक्षा अनुसंधान एवं विकास संगठन ने फुल बॉडी डिसइंफेक्शन चैंबर विकसित किया है।

पुणे: कोरोना वायरस का अग्रिम पंक्ति में रहकर सामना कर रहे स्वास्थ्य कर्मियों के लिए रक्षा अनुसंधान एवं विकास संगठन (Defence Research and Development Organisation) ने फुल बॉडी डिसइंफेक्शन चैंबर विकसित किया है।

आधिकारिक विज्ञप्ति के मुताबिक, महाराष्ट्र में अहमदनगर स्थित डीआरडीओ के व्हीकल रिसर्च एंड डेवलेपमेंट इस्टेब्लिशमेंट ने 'पर्सनेल सैनिटाइजेशन इंक्लोजर' विकसित किया है। चलकर निकल जाने वाले इस पोर्टेबल इंक्लोजर में सैनिटाइजर और सोप डिस्पेंसर लगे हैं। इसमें प्रवेश करते ही फुट पैडल के इस्तेमाल से कीटाणुरहित बनाने की प्रक्रिया शुरू हो जाती है। चैंबर में प्रवेश करते ही बिजली से चलने वाला पंप हाइपोसोडियम क्लोराइड की कीटाणुनाशक धुंध पैदा करता है।

बता दें कि यह इंक्लोज 25 सैकेंड तक हाइपोसोडियम क्लोराइड स्प्रे करता है और इसके बाद अपने आप रुक जाता है। इस दौरान चैंबर में डिसइंफेक्शन की प्रक्रिया से गुजर रहे व्यक्ति को अपनी आंखें बंद रखनी होती हैं। 650 व्यक्तियों के डिसइंफेक्शन के बाद ही इस चैंबर में सैनिटाइजिंग सोल्यूशन को रिफिल करने की जरूरत होती है।

इस प्रणाली का निर्माण गाजियाबाद स्थित मैसर्स दास हिताची लिमिटेड की मदद से चार दिन में किया गया है। इसका इस्तेमाल अस्पतालों, मॉल्स, कार्यालयों और अहम प्रतिष्ठानों के प्रवेश और निकास पर व्यक्तियों को कीटाणुरहित बनाने के लिए किया जा सकता है।

इसी क्रम में हैदराबाद स्थित रिसर्च सेंटर इमारत और चंडीगढ़ स्थित टर्मिनल बेलिस्टिक्स रिसर्च लेबोरेटरी ने कोविड-19 मरीजों का इलाज कर रहे डॉक्टरों और नर्सो के लिए फेस प्रोटेक्शन मास्क विकसित किए हैं। यह काफी हल्के हैं जिसकी वजह से इन्हें लंबे समय तक पहनना आरामदायक है।

https://www.jagran.com/news/national-fight-against-coronavirus-drdo-designs-full-body-disinfection-chamber-and-special-face-mask-20166036.html

अमर उजाला

Sun, 05 April 2020

अब आसानी से सैनिटाइज होंगे दुर्गम एरिया के सैन्य ऑफिस, यूनिटें

कोरोना के खतरे के मद्देनजर अब सैन्य, यूनिटों, कार्यालय और जवानों की बैरकों को आसानी से सैनिटाइज किया जा सकेगा। खासकर हाई एल्टीट्यूड एरिया में तैनात आर्मी और एयरफोर्स की वे यूनिटों व कार्यालय जहां इस वक्त सैनिटाइजेशन एक बड़ी चुनौती बनी हुई है, वहां भी अब इस काम को किया जा

सकेगा। इस काम के लिए डिफेंस रिसर्च एंड डेवलपमेंट ऑर्गेनाइजेशन (डीआरडीओ) ने खास पोर्टेबल बैकपैक सैनिटाइजेशन इक्यूपमेंट तैयार किया है। उपकरण की खास बात यह है कि इसे कहीं पर भी कमर पर लादकर आसानी से ले जाया जा सकता है। यदि इस उपकरण को कमर पर लादकर काम नहीं करना है तो डीआरडीओ ने एक और विद ट्रॉली सैनिटाइजेशन उपकरण भी तैयार किया है, जिसे आसानी से कहीं भी ले जाया जा सकता है।

अफसरों का कहना है कि इस उपकरण का इस्तेमाल अस्पतालों, मेट्रो, बसों समेत उन दुर्गम और तंग इलाकों में किया जा सकता है, जहां बड़े सैनिटाइजर वाहनों का जाना संभव नहीं है। इस वक्त सैन्य क्षेत्रों में बड़े सैनिटाइजर वाहनों से इलाके को सैनिटाइज करने का काम चल रहा है, लेकिन सेना को हाई एल्टीट्यूड एरिया में इस काम को लेकर खासी परेशानी का सामना करना पड़ रहा है। इस एरिया में जवानों की बैरकों को यूनिटों और कार्यालयों को सैनिटाइज करने के लिए यह उपकरण कारगर साबित होंगे। एयरफोर्स और नेवी के लिए भी यह बड़े मददगार बनेंगे। दोनों तरह के ये सैनिटाइजेशन उपकरण दिल्ली पुलिस ने भी डीआरडीओ से लिए हैं।

ये है उपकरण की खासियत

- द सेंटर फॉर फायर एक्सप्लोसिव इनवायरमेंट सेफ्टी की मदद से दो तरह के बैकपैक व विद ट्रॉली सैनिटाइजेशन उपकरण तैयार किए गए।
- बैकपैक उपकरण इनकॉरपोरेट्स लो प्रेशर ट्वीन फ्लूड टेक्नोलॉजी (एयर एंड डिसइनफेक्टेंट लिक्विड) पर आधारित है।
- यह बैकपैक उपकरण 300 वर्ग मीटर एरिया को एक बार में सैनिटाइज कर सकता है।
- दूसरा हायर कैपेसिटी विद ट्रॉली वाला उपकरण सिंगल फ्लूड टेक्नोलॉजी पर आधारित है।
- विद ट्रॉली उपकरण की टैंक कैपेसिटी 50 लीटर की होगी और 15 मीटर दूरी से यह 3000 वर्ग मीटर सैनिटाइज कर सकेगा

सैनिटाइजर, मास्क भी बना रहा डीआरडीओ

कोरोना वायरस के चलते डीआरडीओ इन दिनों सैनिटाइजर व मास्क भी तैयार कर रहा है। सैनिटाइजर की सप्लाई विभिन्न फोर्सेज के साथ-साथ दिल्ली पुलिस को भी की गई है। अभी तक डीआरडीओ की ओर से 4000 लीटर सैनिटाइजर विभिन्न आर्म्ड फोर्सेस को, 1500 लीटर मिनिस्ट्री ऑफ डिफेंस, 300 लीटर संसद भवन के लिए और 500 लीटर अन्य सुरक्षा एजेंसियों को उपलब्ध करवाया जा चुका है। इस वक्त डीआरडीओ रोजाना 20 से 30 हज़ार लीटर सैनिटाइजर का उत्पादन कर रहा है। इसके अलावा रोजाना 10 हज़ार एन-99 मास्क भी तैयार किए जा रहे हैं। अभी तक 20,000 थ्री लेयर मास्क डीआरडीओ की ओर से दिल्ली पुलिस को उपलब्ध करवाए जा चुके हैं। जबकि एन-95 मास कभी बनाए जा रहे हैं।

https://www.amarujala.com/haryana/panchkula/drdo-designed-portable-backpack-sanitization-equipment-panchkula-news-pkl3715243170

THE HINDU

Sun, 05 April 2020

COVID-19 | DRDO comes up with more products to tackle coronavirus

The Defence Research & Development Organisation (DRDO) has announced a few more products made by its scientists with indigenous technologies to combat coronavirus pandemic.

The Centre for Fire Explosive & Environment Safety (CFEES), Delhi, developed two configurations of sanitising equipment which are spin-offs from technologies developed for fire suppression applications. First is portable sanitisation equipment for spraying decontamination solution consisting of 1% Hypochlorite (HYPO) solution for sanitisation of suspected area.

The backpack generates very fine mist and is capable of disinfecting an area up to 300 metres whereas the trolley mounted large area sanitisation equipment can spray the disinfectant liquid up to 3,000 metres.

It has a tank capacity of 50 litres and has a throw distance of 12-15 metres. The Delhi Police has been supplied with these machines and the same can be supplied to others too, informed an official spokesperson.

Ahmednagar-based DRDO laboratory, VRDE, has designed full body disinfection chamber called as 'Personnel Sanitisation Enclosure' where a walk through enclosure is designed for personnel decontamination, one person at a time.

This is a portable system equipped with sanitiser and soap dispenser. On entering the chamber, electrically operated pump creates a disinfectant mist of hypo sodium chlorite. The mist spray is calibrated for an operation of 25 seconds and stops automatically indicating completion of operation but the person has to keep eyes closed inside the chamber.

The system consists of roof mounted and bottom tanks with a total of 700 litres capacity. About 650 personnel can pass through the chamber for disinfection until the refill is required. It can be seen through glass panels on side walls for monitoring purpose and is fitted with lights for illumination during nights with a an operator cabin to monitor. It has been manufactured with the help of M/s Dass Hitachi Ltd, Ghaziabad, within four days.

https://www.thehindu.com/news/cities/Hyderabad/coronavirus-drdo-comes-up-with-more-products-to-tackle-covid-19/article31261371.ece

MIRRORNOWNEWS.COM

Sun, 05 April 2020

Portable sanitization enclosure to be designed for Delhi residents

The system consists of roof mounted and bottom tanks with a total of 700 liters capacity. Approximately 650 personnel can pass through the chamber for disinfection until the refill is required

New Delhi: In a bid to contain the spread of coronavirus, the Defence Research and Development Organisation (DRDO) has designed a personnel sanitization enclosure that can be used for disinfection of personnel at entry to hospitals, malls, office buildings and critical installations.

This walk through enclosure is designed for personnel decontamination, one person at a time. This is a portable system equipped with sanitiser and soap dispenser. The decontamination is started using a foot pedal at the entry.

On entering the chamber, electrically operated pump creates a disinfectant mist of hypo sodium chloride for disinfecting. The mist spray is calibrated for an operation of 25 seconds and stops automatically indicating completion of operation.

The system consists of roof mounted and bottom tanks with a total of 700 liters capacity. Approximately 650 personnel can pass through the chamber for disinfection until the refill is required.

A separate operator cabin is provided to monitor overall operations.

This system can be used for disinfection of personnel at the areas of controlled ingress and egress such as entry and exit to hospitals, malls, office buildings and critical installations. The DRDO has also developed a face protection mask for healthcare professionals handling COVID-19 patients. Its light weight construction makes it convenient for comfortable wear for long duration. This design uses commonly available A4 size Over-Head Projection (OHP) film for face protection.

The total positive cases of COVID-19 in India stand at 3,072, according to the Ministry of Health and Family Welfare.

https://www.timesnownews.com/mirror-now/in-focus/article/portable-sanitization-enclosure-to-be-designed-for-delhi-residents/573958

onmanorama

Sun, 05 April 2020

DRDO's missile Scientists churn out products to fight COVID-19

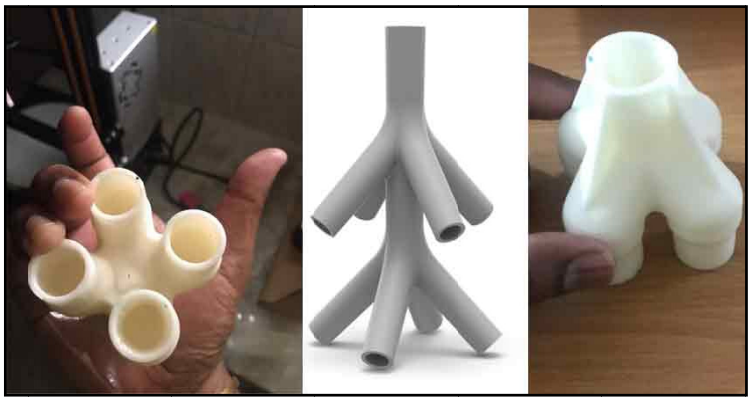
Some of the best brains behind a number of strategic and tactical missile missions at APJ Abdul Kalam Missile Complex in Hyderabad are now burning the midnight oil to help medical fraternity fight the coronavirus

By Anantha Krishnan M

Bengaluru: Necessity is the mother of invention. True to this adage, Indian missile Scientists have tweaked their trajectory to hit hitherto unknown targets to neutralise COVID-19 threat.

In short, some of the best brains behind a number of strategic and tactical missile missions at APJ Abdul Kalam Missile Complex in Hyderabad are now burning the midnight oil to help medical fraternity ght the coronavirus.

Amid all the restrictions around, a select group of scientists from Research Centre Imarat (RCI), a top arm of Defence Research and Development Organisation (DRDO) in the Missile Complex, are developing a number of healthcare products on a war-footing.



Seeing the urgency and not wanting to wait for any formal approvals, some scientists have even spent money from their own pockets before the government relaxed rules and gave powers to the lab directors to utilise required funds.

Interestingly, many of the technology used to develop these products to ght COVID-19 are borrowed from systems and sub-systems on board many Indian missiles.

Among the products that have passed the prototype testing stages and already with industrial partners for mass production are: a full control and actuators) and high response solenoid valves (use for missile control) for ventilator pumps to name a few.

Along with local industry work is in full swing to develop multiplexed ventilation system (can be connected to 2-4 patients at a time), multiplexing adapter for existing ventilators with/without any ow control for each channel and multiplexing adapter for existing ventilators with computer-based automated and regulated flow control for each channel.

Team RCI's contribution is in addition to the bio suits and ventilators being developed by various DRDO labs to combat the virus.

Sources in the Missile Complex confirm to Onmanorama that DRDO headquarters has stationed its Director General (Production Coordination & Services Interaction) GN Rao in Hyderabad to monitor the progress of the design and mass production of these products.

They say DRDO Chairman Dr G Satheesh Reddy has been interacting with the Scientists and industry partners constantly over video conferencing three to four times a day monitoring the progress of the design and mass production of these products.

Vibrant team

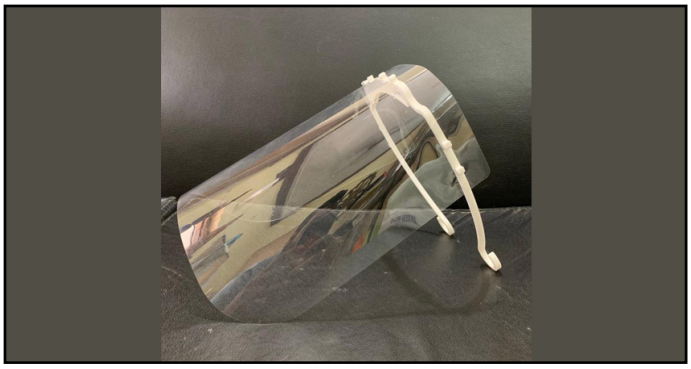
The young RCI team consists of scientists from mechanical, electronics and computer science streams working on various missile systems. Their areas of expertise are in electromechanical and hydraulic actuation systems, missile electronic packaging and dynamic testing, imaging sensor and processing, on board embedded computers and real-time software development.

Three core and five supporting teams have been logging close to 20 hours a day in the last two weeks. Most of the team members average around 35 years.

The core team consists of G Sreedhar Babu, Harish Akella, Maruti Sairam with the logistics support from Dr Rahul Dixit, Dr P Anil Kumar, RJK Chari, Harminder Singh and Kuldeep.

Their expertise range from electro mechanical actuation systems, imaging infrared seekers, missile launch console development, missile software development, fiight avionics simulation and testing, high precision and response valves, electrical integration of missile systems, heat exchangers and marine systems.

These youngsters (with 10 to 20 years of experience) have worked with missions, including A-SAT, exo\endo-air defence missiles, UAVs, target missiles, Nag, Helina, B05, K4, precision guided munitions, anti-radiation missile and oating test range.



Sources say that Scientists have used most of the proven missile systems to suit the urgent timelines with minimal tweaking.

“The visor-type face mask is the best example of quick design and development within three days. Various design options were explored and the prototypes were 3D printed by our production partners and given to a team of doctors for necessary inputs and suggestions. The nal product was released after accommodating their suggestions,” says a scientist.

For multiplexing ventilation system, the design was completed in a day with 14 different options being made available to the users. The prototypes were evaluated by a team from Apollo DRDO Hospital and ESICH.

Big Challenges

The RCI team said that everyone was motivated to design and deliver products despite several challenges owing to COVID-19 restrictions, including the lockdown.

“All of us had the required knowledge and expertise to do the job. There were many issues to be solved as we are using the existing designs for a completely different purpose. Lot of verication and validation were to be done as these were now being part of a medical device. In addition we had to face technical and logistic challenges. The Management Service Division, Procurement wing, office of RCI director (Narayana Murthy) and ofce of Director General, Missiles and Strategic Systems (MSR Prasad) have been backing our efforts non-stop,” says another scientist.

The team sought special permissions from the Ministry of Defence to fast-track procurement process, following which the purchase order was placed within a day for prototype development and die-making. In the normal process this would have taken three weeks.

“Our production partners supported to their maximum extent possible without even asking for the conrmed production order or number of units required. They spent lakhs of rupees for design prototyping, die making and evaluation,” says a scientist.

The Scientists said that many hospitals are not sparing any options and are even stockpiling washbasin drain pipes to use as ventilator pipes in a worst case scenario.

“We went to discuss ventilator development and carried 10 prototypes of masks. The medical staffs were so impressed with it and they wanted us to work on multiplexing ventilators for the forecasted requirement. We had to return empty handed as all the prototypes were grabbed by them,” adds the scientist.

Help Pours in

Most of the doctors were overwhelmed to deal with missile scientists, a deviation from their normal interactions, to nd solutions to an impending threat.

“We could sense the urgency of the innovation and the healthcare professionals are eagerly looking for the gadgets to do their job safely and efciently,” says a scientist.

Timely help came from Dr Balakrishna of Appolo DRDO Hospital who provided ventilator and lung simulator to see the efcacy of the prototype assembly and 3D printed ttings. Similarly, they said that Dr Srinivas, dean of ESI Medical College, too offered equipment for integrations trials.

Various industrial partners associated with RCI and DRDO in Hyderabad will begin the mass production. The frames will be produced by a Hyderabad-based company iMake. The ventilator multiplexing systems are still under development phase and hunt for a production partner for mass production is on.

In an email response to Onmanorama’s queries Kodeboyina Sudhir of iMake, who is making visor-type masks (face shield) for healthcare professionals, said they have already proven their expertise in aviation electronic parts, tire patterns, prototypes of missile components and miniature/scale models.

He said the rm has already received the nal design from RCI after testing 14 versions different hospitals. “The mould design has been nalised and the milling is in progress. Through the injection mould, we will be able to make 5000 units per day, starting April 6,” he adds.

A top DRDO ofcial overseeing the mission says that the entire RCI team was chosen by DRDO Chairman Dr Satheesh Reddy based on his

The RCI team is quick to share the credit with doctors and medical attendants who gave rare insights into the immediate needs.

(*The writer is an independent aerospace and defence journalist, who blogs at Tarmak007 and tweets writetake*.)

https://english.manoramaonline.com/news/nation/2020/04/04/drdo-missile-scientists-products-covid19-coronavirus.html

THE TIMES OF INDIA

Sun, 05 April 2020

DRDO develops walk-through fumigation unit

New Delhi: The DRDO on Saturday said it has developed a portable full-body decontamination chamber or personnel sanitisation enclosure (PSE), which can be used in hospitals, office buildings and other critical installations.

"The enclosure, equipped with sanitiser and soap dispenser, is a walk-through enclosure designed to disinfect one person at a time. Designed by DRDO lab, Vehicle Research Development Establishment, at Ahmednagar, the PSE has been manufactured with the help of M/s D H Ltd, Ghaziabad within four days," said an official.

"Upon entry, electrically-operated pumps create a disinfectant mist of hypo sodium chloride. The mist spray is calibrated for an operation of 25 seconds," he said.

Two other DRDO labs have also developed light-weight full face protection masks for health care professionals.

https://timesofindia.indiatimes.com/india/drdo-develops-walk-through-fumigation-unit/articleshow/74988601.cms

NEWS SERVICES DIVISION
ALL INDIA RADIO

Sun, 05 April 2020

DRDO laboratory designs full body disinfection chamber

Vehicle Research Development Establishment, VRDE Ahmednagar which is a DRDO Laboratory has designed full body disinfection chamber called as PSE. This walk through enclosure is designed for personnel decontamination. This is a portable system equipped with sanitiser and soap dispenser. The decontamination starts using a foot pedal at the entry. On entering the chamber, electrically operated pump creates a disinfectant mist of hypo sodium chloride for disinfecting. The mist spray is calibrated for an operation of 25 seconds and stops automatically indicating completion of operation. The system consists of roof mounted and bottom tanks with a total of 700 liters capacity. Approximately 650 personnel can pass through the chamber for disinfection until the refill is required. The system has a see-through glass panels on side walls for monitoring and is fitted with lights for illumination during night time operations. A separate operator cabin is provided to monitor overall operations.

The system has been manufactured with the help of D H Ltd, Ghaziabad, within four days. This system can be used for disinfection of personnel at the areas of controlled ingress and egress such as entry and exit to hospitals, malls, office buildings and critical installations.

Research Centre Imarat or RCI Hyderabad and Terminal Ballistics Research Laboratory, TBRL, Chandigarh, have developed face protection mask for health care professionals handling COVID-19 patients. Its light weight construction makes it convenient for comfortable wear for long duration. This design uses commonly available A4 size Over-Head Projection (OHP) film for face protection.

One thousand face shields are being produced daily in TBRL and provided to Postgraduate Institute of Medical Education and Research Chandigarh. Similarly 100 are produced at RCI and these have been handed over to Employees' State Insurance Corporation, ESIC, Hyderabad.

http://newsonair.com/Main-News-Details.aspx?id=384720

THE NEW INDIAN EXPRESS

Sun, 05 April 2020

COVID-19 outbreak: DRDO develops disinfection chamber, face mask

The Vehicle Research and Development Establishment, a DRDO laboratory at Ahmednagar in Maharashtra, has developed a `Personnel Sanitization Enclosure'

Pune: A unit of the Defence Research and Development Organization (DRDO) has designed a full-body disinfection chamber for healthcare workers who are in the forefront of battle against coronavirus, it said on Saturday.

The Vehicle Research and Development Establishment, a DRDO laboratory at Ahmednagar in Maharashtra, has developed a `Personnel Sanitization Enclosure', an official release said here.

The walk-through enclosure is a portable system equipped with sanitizer and soap dispenser.

"The decontamination is started using a foot pedal at the entry. On entering the chamber, an electrically operated pump creates a disinfectant mist of hyposodium chloride for disinfecting," the DRDO release said.

"The mist spray is calibrated for the operation of 25 seconds and stops automatically. Personnel undergoing disinfection will need to keep their eyes closed while inside the chamber," it said.

Some 650 personnel can pass through the chamber for disinfection until a refill of sanitizing solution is needed.

The system was manufactured with the help of M/s Dass Hitachi Ltd, Ghaziabad, within four days, and can be used for disinfection of personnel at entry and exit to hospitals, malls, office buildings and critical installations, the DRDO release said.

The Research Centre Imarat (RCI), Hyderabad and Terminal Ballistics Research Laboratory, Chandigarh, have developed a face protection mask for doctors and nurses who are treating COVID-19 patients, it said.

"Its lightweight construction makes it convenient for comfortable wear for a long duration," the release added.

https://www.newindianexpress.com/nation/2020/apr/04/covid-19-outbreak-drdo-develops-disinfection-chamber-face-mask-2125825.html

Inc42

Sun, 05 April 2020

Ventilators, masks & PPE suits: Here's how DRDO is taking on Covid-19

By Aman Rawat

- ***DRDO is special adhesive to make full-body suits at low cost at a scalable level***
- ***DRDO is also addressing the shortage of ventilators***
- ***It is also manufacturing masks and sanitisers***

In the wake of the Covid-19, tech startups have taken the charge and are helping the healthcare ecosystem come with unique propositions to solve medical and safety challenges. Joining these forces against Covid-19, state-owned Defence Research and Development Organisation (DRDO) has come with a slew of measures that can come handy in these situations.

To start with, the DRDO is addressing the shortage of personal protective equipment by using a special adhesive which finds its application in submarines. Scientists are testing this adhesive to make full-body suits at low cost at a scalable level. This adhesive can be used as a special coating that can strengthen high-performance fabrics. DRDO uses this adhesive for making suits of paratroopers.

DRDO has shared this technology with two companies which are now looking to manufacture around 15K to 20K suits every week. The first batch of these suits is expected to be completed shortly, according to a report by ET.

Scaling-Up Manufacturing Of Safety Gear

Besides the support in manufacturing personal protection equipment (PPE) or bodysuits, DRDO is also manufacturing five-layered N 99 face masks. These masks are being prepared at the Gwalior-based Defence Research and Development Establishment. As of now, it is manufacturing around 200K masks every week.

Further, DRDO has also come up with a reusable face shield to protect medical professionals from getting infected to coronavirus. These masks are produced at an in-house 3D printing facility used to make these masks and shields.

Additionally, the DRDO has also taken up the responsibility to scale up the manufacturing of hand sanitisers. The organisation is producing them at multiple laboratories across the country. These sanitisers are provided to government agencies and police departments.

The defence organisation is also addressing the shortage of ventilators to bolster the healthcare system of the country. DRDO chairman G Sateesh Reddy said that multi-patient ventilation kits have been developed and successfully tested that would enable the use of a single ventilator for four to eight patients in case of an emergency.

Reddy also noted that most of these technologies are developed at a low cost so that their mass-scale production can take off easily. He added that scientists throughout the country have been tasked with developing and sharing technologies at zero cost with the private sector to mass-produce critical items identified by the government, with solutions being provided overnight and personnel working overtime to tackle stumbling blocks.

Overall, the DRDO is supplying more than six items which are in high demand across the country amid the coronavirus outbreak. Reddy said that the organisation is working on to roll out more products in the coming days. For the same, the organization is in continuous touch with the private sector as well. "The scientific fraternity has felt the need of the hour and wants to use existing skills to create spin-off technologies. We are coming out with quick solutions and products. Scientists have been working day and night to rise to the occasion," Reddy added.

https://inc42.com/buzz/ventilators-masks-ppe-suits-heres-how-drdo-is-taking-on-covid-19/

Sun, 05 April 2020

India's Brahmos-ER trial just got postponed. What's expected from new BrahMos?

India's DRDO called off a crucial missile test recently due to the outbreak of the Chinese Virus in the country which was followed by lock down announced by the government and closing of all International flights which prevented the participation of some critically important observers from Russia for crucial BrahMos test flight which now stands canceled.

India which is now a part of the elite Missile Technology Control Regime (MTCR) carried out internal software upgradation to the Indo-Russian developed BrahMos missile which removed its 290km range limiter and also successfully tested it's up to 400km range recently, but desired longer version of the missile remains to be done and it was reported that now canceled test was actually of the new BrahMos with Extended range which has been designated as " BrahMos-ER ".

CEO of BrahMos Aerospace, Sudhir Kumar Mishra has confirmed to media that the BrahMos-ER is ready which will have a range of 500km but a meager extended range of 100km will also come with better missile speed as the internal propellant carrying capability has been increased along with tweaked scram-jet air-breathing jet engine. which can now officially be able to fly over Mach 3 and close to Mach 4.

The original plan after India's entry into the MTCR regime was to increase its range from 290 km to 800 km like seen with Russian developed Oniks-M supersonic cruise missile upon which BrahMos was originally based and as interim upgrade 400km range was tested before work began on the development of BrahMos-ER with a range of 800km.

The first test of the BrahMos missile, which is operational with the Indian Navy and Army, was conducted in 2001, since then it has added additional capabilities like steep 90-degree vertical deep dive version for mountain warfare and evasive 'S' maneuver against highly defended strike targets but the most of the other technology has remained the same for last two decades.

idrw.org has been told that BrahMos had a stellar run as psychological weapon platform which couldn't be defeated by any modern air defense system and Indian military planners want to keep it that way even though many countries over the years have been working to create weapons which can take down supersonic cruise missiles like BrahMos not many have been able to demonstrate it.

With increased speed from Mach 2.8 to near Mach 3.5-4, Indian military planners want to ensure that Brahmos-ER remains unchallenged in the coming decades and remains undefeated against any air defense systems our adversaries might have been developing. idrw.org has been told that the development of two variants of Brahmos-ER with a range from 500km to 800km can't be ruled out which will have a speed of Mach 2.5 or near Mach 4 depending on the strike target.

BrahMos Aerospace is planning to work on the development of BrahMos-NG which will be a lighter and smaller version of the current Brahmos-ER with a similar range between 500-800km being developed specifically for the Indian Air Force which might see further orders from the Indian Navy and Indian Army also. India's joint venture plans to develop a BrahMos-2K which was supposed to be a Hypersonic weapon system with speeds in Mach 5-7 has been delayed due to lack of willingness from Russia, which could be one of the reasons why India instead planned to increase range of the current BrahMos close to Mach 4.

https://idrw.org/indias-brahmos-er-trial-just-got-postponed-whats-expected-from-new-brahmos/#more-224251