

Press release: Spooky science at Dstl

Understanding the bizarre behaviour of quantum particles is challenging but offers many marvellous and mysterious uses that could benefit us all. At the Defence Science and Technology Laboratory (Dstl), physicists are focusing on quantum technology for navigation and sensing.

Working with experts from UK industry and academia, Dstl is developing deployable devices that will be used to see through walls, around corners and underground. For example, the gravity imager uses cold atom technology to detect minute changes in density caused by spaces such as tunnels or rooms, and create a ghostly picture of the hidden world. For the military, this can detect and map hidden areas, but it could also be used more widely to find, for example, sink holes and buried pipes.

Chris, a physicist in Dstl's Future Sensing Technology team, said:

Quantum-enhanced sensors can detect gravity changes at a very fine scale. We're working with industry and academia to shrink the size, weight and power of systems, moving from lab-based prototypes to deployable devices. Crucially, these devices retain the ability to perform measurements to a remarkable level of precision.

We're also developing mathematical tools to make use of the information that these sensors gather. In the case of the gravity imager, we can go from a collection of individual gravity observations to a three-dimensional image of what the subterranean world looks like.

Dstl has already helped Thales create a system that can see, image and identify multiple moving targets at range around corners using quantum photonic technology. The exquisite precision of the technology means it could, in theory, be used to diagnose medical disorders and detect density anomalies without any invasive procedures.

Quantum can also protect us against otherworldly phenomena. Space weather events can interfere with the global navigation satellite system (GNSS) – which includes GPS – and potentially wreak havoc on our daily lives. A recent government report estimates that five days without GNSS would cost the UK economy £5.2 billion. Quantum-based systems for position, navigation and timing would not be affected. Such systems would also be safe from intentional jamming and spoofing.

Chris added:

As well as the gravity imager, we're working on quantum clocks and accelerometers for ultra-precise timing and navigation. GNSS relies on a strong signal between satellites and receiver; whenever this

connection is lost or degraded, for example if you're inside a building or tunnel, the uncertainty in your position grows. Quantum sensors bypass this issue by taking local measurements of motion. The potential applications extend beyond military use; for example first responders could have a navigation system to help in a collapsed building.

At Dstl, we do a lot of our work with the National Physical Laboratory, Birmingham University and Imperial College ensuring UK defence and security benefits from this cutting-edge technology. Glasgow, Strathclyde, Oxford and many other universities are also working with us on future novel quantum sensing technologies.

Dstl has run three successful summer schools for PhD students researching quantum technology. The courses have given students an awareness of military applications and systems engineering, as well as commercial and business skills, to help them think about real-world uses of their research and empower them to contribute to the future UK quantum landscape after they have concluded their current research.

Watch the video to find out more about quantum physics.

[What is quantum physics?](#)

Press release: Secretary of State for Northern Ireland statement on talks

James Brokenshire provides an update on the political situation in Northern Ireland.

Rt Hon James Brokenshire MP, Secretary of State for Northern Ireland said:

“The parties have made further progress during the course of today. They are making certain additional requests of the UK Government which we need to consider.

“In the light of this, I believe it is right to defer the assessment on whether to introduce legislation to Parliament this week to enable an Executive to be formed. The parties will recommence talks in the morning and I will reassess the position tomorrow night.”

Speech: “A successful peace process is at the heart of any strategy to defeat terrorism and traffickers in the Sahel”

Thank you Mr. President for convening today’s debate. Your country deserves great credit for your leadership, and your steadfast support for the countries of the Sahel.

I would also like to thank the Secretary-General and their excellencies: Foreign Minister Diope, Chairperson Faki Mahamat, and the EU Special Representative to the Sahel, Angel Losada Fernández. We welcome the Secretary-General’s report and today’s briefing on the activities of the G5 Sahel Joint Force.

During the recent Security Council visit, all Council members saw the serious challenges facing the countries of the Sahel. Those challenges represent a serious danger to the people of the region, and to partners and allies who are working to support them. I want to begin by offering my condolences to all of those so tragically killed, including most recently three UN peacekeepers from Chad in northern Mali on Thursday.

In the last twelve months we’ve witnessed a continuing stream of deadly terrorist attacks resulting in the tragic loss of innocent lives; an increase in attacks against MINUSMA forces; the ongoing corrosive influence of organised criminals trafficking weapons, drugs and people across the region; and the desperate journey of migrants, so often intercepted by people traffickers seeking to exploit them.

We all have a role to play in addressing these challenges. The United Kingdom has supported projects across the Sahel and wider region, particularly in Nigeria and the Lake Chad Basin.

The British Army trained 22,000 Nigerian troops in counter terrorism tactics last year alone. We have invested over \$6 million in tackling modern slavery, and \$2.5 million in a Joint Border task force with the Nigerian Army. We also provide training for Nigerian anti trafficking officers.

Across the Sahel the United Kingdom spent over \$225 million on humanitarian and development projects last year, and we are providing human rights training to Malian troops through the EU Training Mission in Mali. Our National Crime Agency recently dismantled two people-smuggling rings in Mali. And we stand ready to do more to support the G5 countries, and their allies, to improve the security situation.

The creation of the G5 Sahel Joint Force is a step forward in countering terrorism and illegal migration. We were pleased that this Council offered

its political support to the mission earlier this year. For our part the United Kingdom is currently undertaking a scoping mission to see what more we can do in the Sahel, including potential bilateral support to the G5 Sahel Joint Force.

Funding is an important factor in determining a mission's success, which is why we were pleased to support the EU commitment to provide €50 million to the Joint Force. We welcome the work undertaken to establish the G5 Joint Force. I was encouraged by reports from my ambassador following his visit to the region.

We recognise the challenges faced by the force and the value of tackling terrorists and traffickers with a holistic approach right across the region, in particular ensuring there is a clear plan to deliver services alongside security. If security gains are to take root, work must also continue to develop robust frameworks for compliance with human rights and international humanitarian law. We welcome the Secretary-General's report and his proposals for potential UN support. We are studying these in detail and considering the complementary roles that bilateral and multilateral support can play in the Sahel region. We must ensure that MINUSMA is able to deliver its current mandate effectively and efficiently.

Mr President,

Over 140 brave MINUSMA peacekeepers have given their lives for the people of Mali. They and G5 forces operate in one of the most dangerous places in the world and I pay tribute to them. And I call upon the Government of Mali and other parties to the peace process to show the same courage, commitment, and resolve to bring unity to the country. A successful peace process is at the heart of any strategy to defeat terrorism and traffickers in the Sahel. We in this Council expect a redoubling of efforts for peace and to see the political will to overcome the remaining obstacles.

To conclude, the United Kingdom remains committed to peace and security across the Sahel. To that end, I reiterate our strong support for the G5 Sahel Joint Force which I sincerely believe can make an important contribution towards achieving this goal.

Speech: "The challenge is to talk about women and peace and security when our agenda is Syria, or Somalia, or South Sudan"

Thank you Mr President, thank you to all of our briefers, and to our visiting

ministers, for their remarks. I'm particularly grateful that we had the opportunity to hear a civil society voice in this Chamber today. That's even more vital at a time when so many such voices are being ignored, threatened or silenced around the world. So that's great and it's also great that we have so many people attending this debate with us today.

But in the spirit of trying to improve still further how we do things here, let me make a few points frankly. We meet in this format once a year and we repeat what we already know: that we need more women at the negotiating table, that peace deals stand a greater chance of succeeding with women taking part, that we need to turn our words into action.

And yet, year after year, session after session, SG report after SG report, the actual implementation of this agenda still falls way too short. We've had resolution after resolution – eight of them since resolution 1325 – and yet the promise of that first historic text still remains unfulfilled.

So I encourage everyone intervening later today to be specific. Specific about what our country is doing since we last met in this format to make the Women, Peace and Security agenda a reality, and then, ideally, to commit to do even more.

This year, the UK has worked to increase women's participation in conflict resolution in some of the most fragile countries in the world: in Somalia, in Syria, in Yemen, in Afghanistan. We've helped women in parliament, in civil society, in the military and in business, to increase their voice, their influence, their participation, and we will keep doing so next year.

But we also know that women, peace and security is about more than work in individual countries. So many of the dangers that women face in conflict are shared dangers, found in every conflict. Dangers like sexual violence. Like stigma against survivors of these horrific crimes. And since these are shared challenges, we must all share in the response if we are to affect international change.

And that's why the UK has been a champion of preventing sexual violence in conflict. It's why we launched the global principles on stigma at UNGA this year. It's why we're running 23 projects in conflict and post-conflict countries to support survivors, end stigma, and deliver justice. And it's why we've contributed \$2 million to the Women's Peace and Humanitarian Fund, and I urge others to contribute, too.

Turning to the peacekeeping, this year UK troops on large-scale overseas missions – whether for the UN or anyone else – now receive pre-deployment training on preventing sexual violence, and on the Women, Peace and Security agenda more broadly. And we'll be launching, alongside our Bangladeshi and Canadian partners, a new global network of military gender champions at the peacekeeping ministerial conference in Vancouver next month.

We strongly support the Secretary-General's commitment to gender parity and his efforts to increase the number of women in peacekeeping. However, the Women, Peace and Security agenda is far more than numbers, and we're

concerned, frankly, that the UN Secretariat are de-prioritising gender advisors in UN missions, and we urge the UN to reinstate accountability through its compacts with UN leaders.

Mr President, in the UK this year, Baroness Hale became the first woman ever to head our supreme court, which makes it the first time in our history that we've had women as our head of state, our head of government, and head of the most senior court in the land. We also this year appointed our first ever Special Envoy for Gender Equality, putting gender equality at the heart of our foreign policy.

But despite these historic steps, we have more to do. So that's why, next year, we'll be launching the UK's fourth National Action Plan, building on progress made, lessons learned, and our discussions with civil society and focus countries.

And my final point, Mr President, is that there is more that we can all do, each of us around this table, both internally in the missions or ministries that we lead, and externally in the Security Council and around the United Nations. Internally, I commend to you the UK Mission's Gender Compact that I launched this year. I encourage you to read it, to steal its good ideas, and apply them in your own missions. And outside our missions, we must practise what we preach in this Security Council every day.

It's easy to talk about women, peace and security when that is the subject on our agenda, like it is today, but the challenge is to talk about women and peace and security when our agenda is Syria, or Somalia, or South Sudan. We could all do better on that, and I encourage everyone to come together to do so.

Thank you.

Speech: A source of 'inspiration and determination for us all' – PM at Parkinson's reception

I am delighted to welcome you all to Downing Street and to have this opportunity to thank you all for everything you are doing to support this brilliant charity and to lead the way in the fight against Parkinson's.

I think what we have just heard so movingly from Emma and from Steve this evening should be a source of both inspiration and determination for us all.

Inspiration, because we should all be inspired by all that Parkinson's UK has helped to achieve at the forefront as we've heard of pioneering research that

has improved our understanding, care and treatment of Parkinson's.

We should be inspired by the immeasurable support that this charity – and so many people in this room – provide to those affected by Parkinson's, as well as to their loved ones and carers.

And I believe we should be inspired too by the achievements of those living with the condition.

People like Emma who, as we have seen tonight, are changing attitudes towards Parkinson's.

And people like the conductor James Morgan – who together with his partner Juliette – have raised more than £270,000 for Parkinson's UK by staging star-studded concerts at the Royal Albert Hall.

These concerts have enabled James to show just how much he can still achieve living with Parkinson's, while at the same time raising vital funds to help others.

And I was delighted earlier to be able to present James and Juliette with a Point of Light award – which recognises outstanding volunteers in our country for their service to others.

But as we draw inspiration from all of these things, so we should also renew our determination to step up the fight against Parkinson's.

For two centuries on from Dr James Parkinson's Essay on the Shaking Palsy, we have simply not done enough or come anywhere near far enough.

We still do not have the capability as Steve has just said to slow or stop the condition in its tracks.

And as Emma and Steve have said so powerfully, the time to act is now.

For our part, this government is investing over £1 billion a year through the National Institute for Health Research – which has doubled its spending on neurological conditions since 2010.

Already Parkinson's UK and the UK research community have achieved a great deal together.

We have many of the world's top scientists and researchers – and while several great discoveries have been made across the world – it is in the UK that we are joining them up.

We have been steadily building towards a tipping point in Parkinson's research and we must do everything possible to bring that moment to pass.

So I would urge everyone across the country to do all they can to support this effort – and to support the vital work of charities like Parkinson's UK.

So that together we can reach that breakthrough moment and bring forward the

day when no-one need fear Parkinson's again.

So on behalf of the whole country, thank you again for all that you are doing in the fight against Parkinson's; thank you for the leadership you are showing in changing attitudes towards Parkinson's, and thank you for all the support that you give to thousands of people across our country.