







We need your help!

Before you start quilting, it would be very helpful if you could fill in a brief evaluation for us. It should only take you 3 mins to complete.

http://bit.ly/QuiltersPre

Many thanks! Clare and Kirsty

Instructions for Quilts 4 Cancer

- 1. Look through the scientific sketches and chose one (or more!)
- 2. Raid your stashes, or use materials supplied by us, to create a 12.5" block inspired by the scientific inspiration.
 - a. We can send you materials if you are shielding or if cost is a barrier.
 - b. Please fill in our request form: https://bit.ly/Q4C_FP_resources
- 3. Post completed blocks/quilts to:
 - a. Quilts 4 Cancer, C/O Dr Clare Hoskins, Room 602a, Level 6, TIC, 99 George Street,
 Glasgow, G1 1RD

Please note the following:

- We accept 12.5" blocks or whole quilts (min. size 36" x 48", think adult lap quilt).
- We can offer a limited number of long arming sessions, if it isn't possible for you to do the quilting on your home machine.
- Join us in our Facebook group and Facebook page for more information about quilt-along Zoom sessions throughout November 2020: http://bit.ly/Q4CNovQuilting

PANCREATIC CANCER STATISTICS







PANCREATIC CANCER SYMPTOMS

PANCREATIC CANCER DIAGNOSIS & TREATMENT

SIGNS TO LOOK OUT FOR



whites of eyes (jaundice)



Loss of appetite and unexplained weight loss



Feeling tired and/or pain in back or abdomen



Change in bowe habits



~10,300 patients with diagnosed each year in the UK: that's 28 every day.

RISK FACTORS



preventable but most are not.

- Genes contribute to your risk
- Other risk factors include:
 - Smoking, alcohol, carrying extra body weight, & red meat.

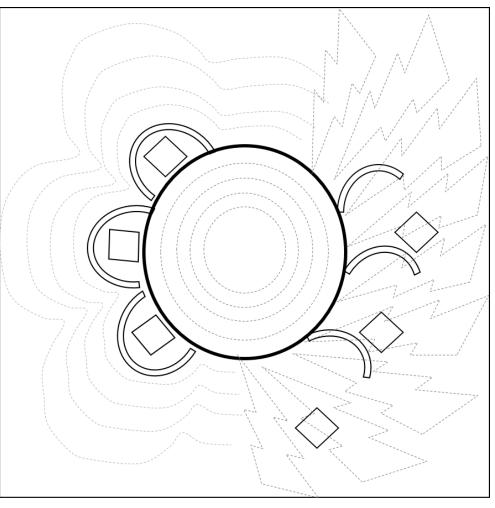


pancreatic cancer do not receive any active treatment.

additional support: <u>Cancer Research UK</u> & <u>Pancreatic C</u>



Dr Clare Hoskins



Very small particles (nanoparticles) have been shown to penetrate deep into pancreatic tumour tissue allowing for drug treatments to reach the site where they are required and help reduce the nasty patient side effects. These nanoparticles act as chaperones for the drug molecules, carrying their cargo past the body's defense systems and to their target site. On arrival, a laser beam activates them to release their drugs, making them more effective than conventional chemotherapy. The nano-carriers themselves are relatively simple and cheap to make and they can be easily tailored for different uses and cancer types.

Dr Clare Hoskins works at the University of Strathclyde and aims to develop new nanomedicine approaches to improve therapies for pancreatic cancer patients.

For further information: clare.hoskins@strath.ac.uk





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SIGNS TO LOOK OUT FOR



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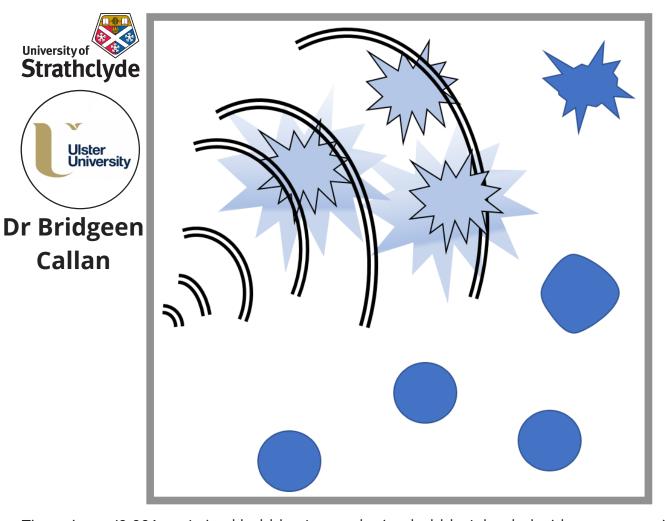
- 37% cases of pancreatic cancer are preventable but most are not.
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7 in 10 people with pancreatic cancer do not receive any active treatment.

Sources and for additional support: <u>Cancer Research UK</u> & <u>Pancreatic Cancer U</u>

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Tiny micron (0.001mm) sized bubbles (termed microbubbles), loaded with oxygen gas in their core and various anticancer agents attached to the surface, can be used to create a new combination therapy for pancreatic cancer. Combining the current antimetabolite treatment with the bubbles means that they can be 'burst' using ultrasound at the site of the tumour, enhancing the delivery through the tough stroma of pancreatic tumours. The encapsulated oxygen is then released and changed into a toxic compound by one of the attached surface compounds to be used against the tumour as an additional anticancer agent.

This work carried out at Ulster University and in collaboration with Oxford University is advancing the range of therapies available for pancreatic cancer patients by reaching those hard to reach tumours.

For further information: b.callan@ulster.ac.uk





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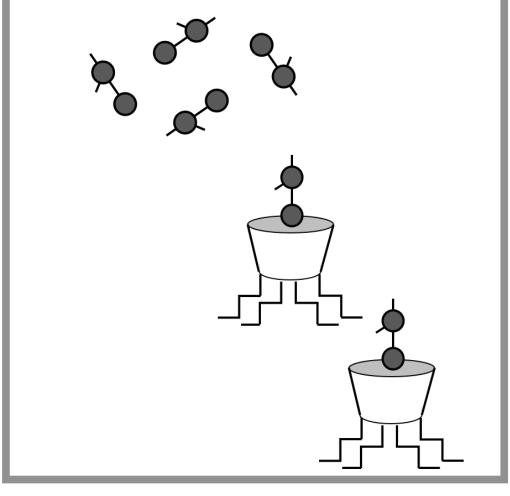


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Many common drugs are not very soluble in water and so are not absorbed very well from the gut into the blood. This means that tablets containing a large amount of the drug must be taken, or these drugs may have to be injected as a solution in oil, which can be very painful. Calixarenes are vase-shaped molecules and the interior of the calixarene is very attractive to these insoluble drugs. A calixarene will associate with a drug and the complex formed may be more soluble in water than the drug alone. Calixarenes can be designed to associate with a wide variety of drugs. Thus, using a calixarene provides a water-based formulation that can be injected. Drug is released when the complex reaches the blood.

This work by Dr Anthony Curtis at Keele University, aims to develop new approaches to improve drug delivery.

For further information: a.d.m.curtis@keele.ac.uk





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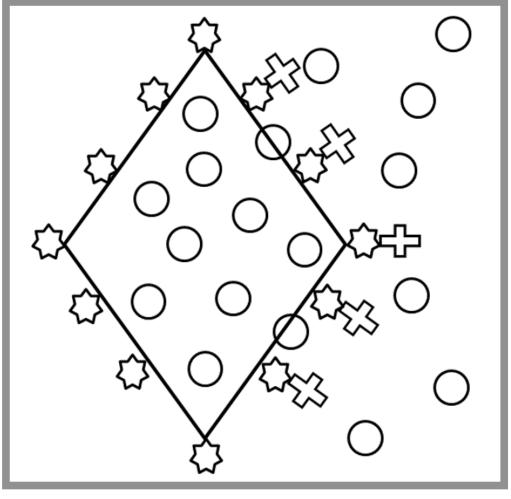
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Prof Ross Forgan



Metal-organic frameworks (MOFs) are hybrid materials made from inorganic (metals) and inorganic (carbon-based molecules) parts. These frameworks are porous and can be loaded with anti-cancer drugs to be used for targeted drug delivery. Targeted drug delivery means that the drug stored inside the MOF is only released once inside the cancer cells avoiding affecting surrounding healthy cells and mitigates unwanted side effects of the treatment. Additional features can be added to MOFs to make them better drug delivery systems such as targeting molecules on the surface which can aid the drug in reaching specific sites of cancer cells and enhancing the performance of the drug.

The aim of the research is to apply MOFs for drug delivery for pancreatic cancer as a better alternative to current cancer therapies. This work is done within the Forgan research group based in the University of Glasgow.





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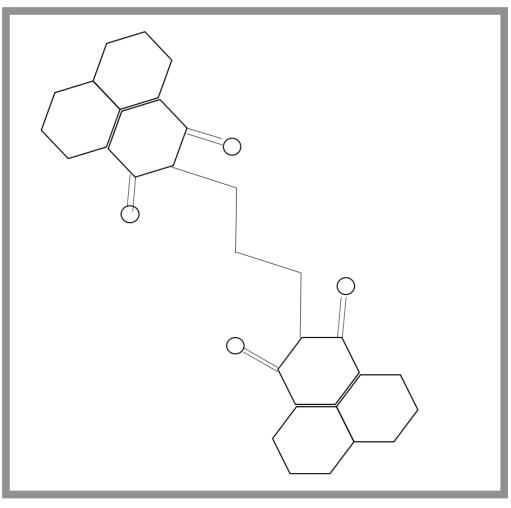


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Dr Paul Kong Thoo Lin



Dr Paul Kong Thoo Lin is Professor of Organic Chemistry in Robert Gordon University Aberdeen. Paul has been working on developing new, more effective drug compounds to treat pancreatic cancer. Paul has worked over the past twenty years developing analogues of naturally occuring polyamines. One area he has investigated extensively is the use of bisnaphthalimide compounds which can insert themselves into the DNA of cancerous tissue and stop their growth. Paul's library of compounds have shown much greater potency than many of the chemotherapies in use today, he is currently working on how to formulate these to administer to patients.

For further information: p.v.s.kong-thoo-lin@rgu.ac.uk





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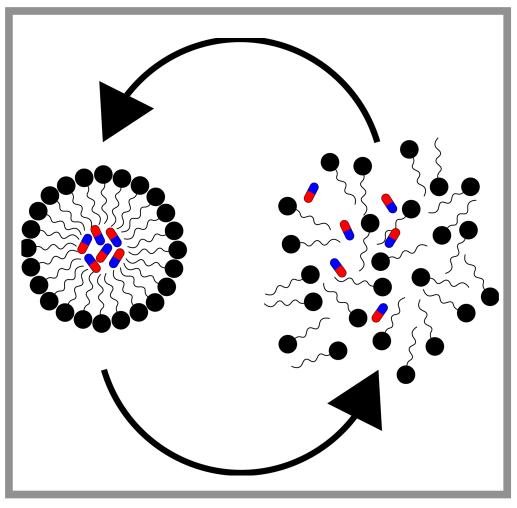


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Dr Clare Hoskins



Drug release using graft polymer micelles.

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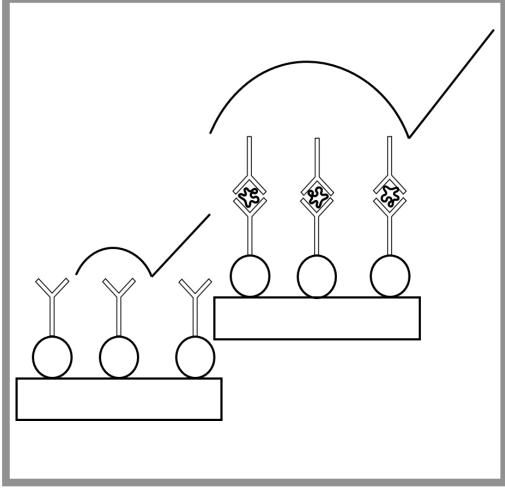


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If someone has pancreatic cancer, early detection is key.

The cancer tumours in their body produce unique cells and we can exploit these for detection in the patient's blood. To do this, we would take a small amount of blood onto a disposable strip, similar to that used for diabetics testing their blood sugar levels.

This work by Dr Lynn Dennany in the University of Strathclyde, aims to develop new approaches to improve diagnostics for pancreatic cancer patients.





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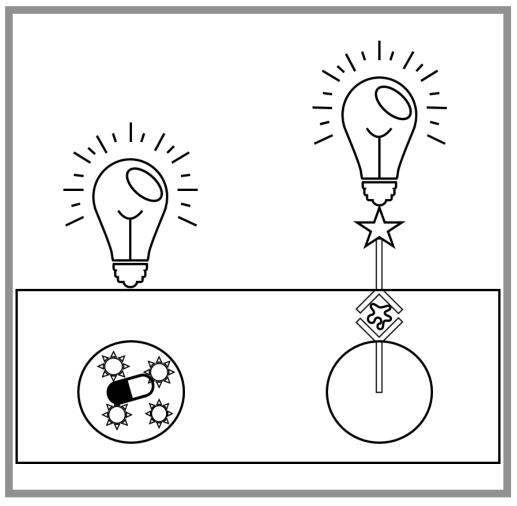


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Dr Lynn Dennany



New methods for detecting circulating cells that are produced by pancreatic tumour tissue for diagnostics are always needed.

Our approach looks at a simple YES/NO response. Our compound produces a light signal in the presence of these cells. The compounds are relatively cheap and the sensor design is simple, making them easily tailor to different cancer types.

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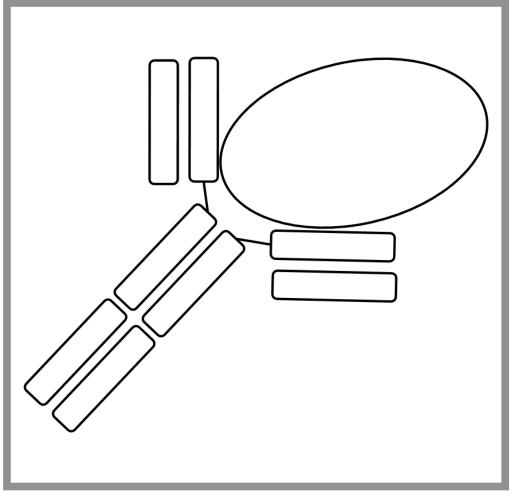
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Understanding the interaction between antibodies and cells released from pancreatic cancer is important in developing new approaches for detection. The antibodies can be tailored to different cells and aid in the diagnostics of various cancer types.

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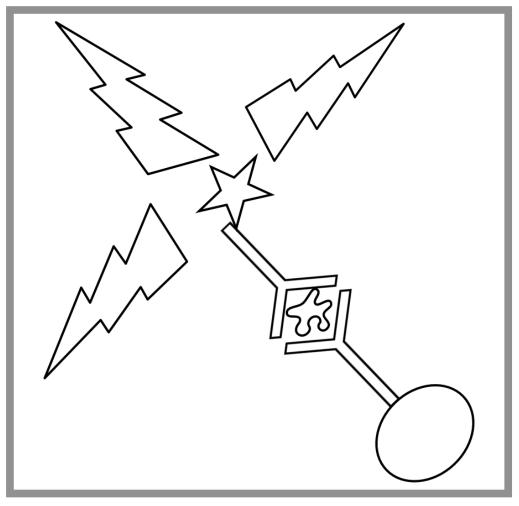


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Detecting extremely low levels of circulating cells is a major challenge for early pancreatic detection. We examine new chemicals that produce light upon interaction with these cells to facilitate early detection.

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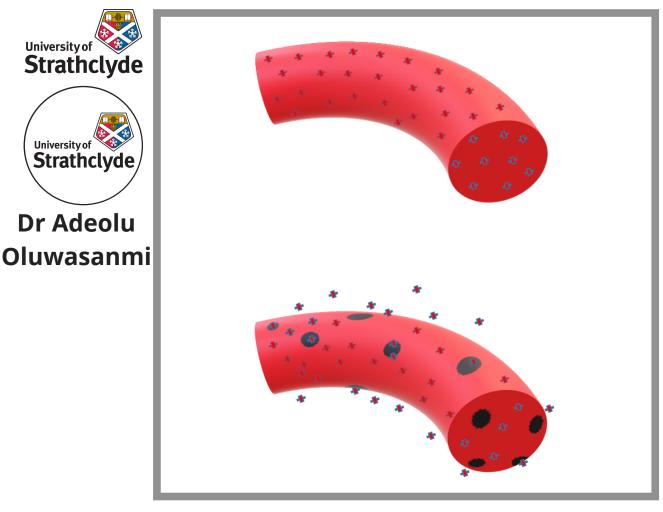


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The anti cancer properties of drugs can be enhanced by targeting cancerous tumours. This can also reduce the severity of the side effects associated with chemotherapy.

Cancer cells instruct the body to grow new blood vessels in order to supply the nutrients required for their unrestricted growth. These new blood vessels are often malformed with gaps within the vessel walls.

Drugs can pass through these vessel gaps and accumulate in the tumour tissue surrounding the blood vessels. Although this concept is debated within the scientific community, Dr Adeolu Oluwasanmi work to discover whether such targeting is possible for pancreatic cancer at the University of Strathclyde.

Further information: adeolu.oluwasanmi@strath.ac.uk





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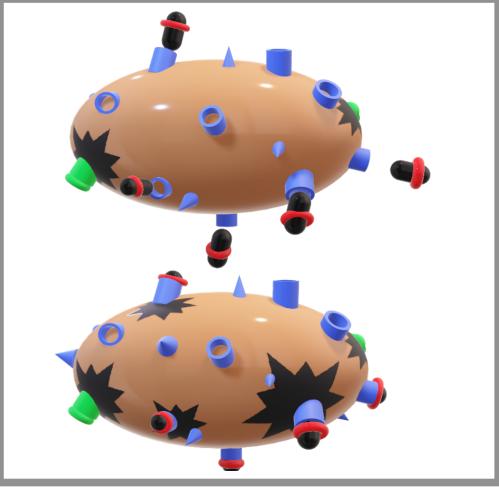
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The surface of cells including cancerous cells, contain receptors. Receptors bind to substances called ligands. Some drug formulations can include ligands that specifically bind to cancer cells receptors.

This binding can aid in the accumulation of the drug within the tumour and even aid the drug in entering the cancer cells.

Dr Adeolu Oluwasanmi works at the University of Strathclyde as a postdoc in the Department of Pure and Applied Chemistry. Further information: adeolu.oluwasanmi@strath.ac.uk





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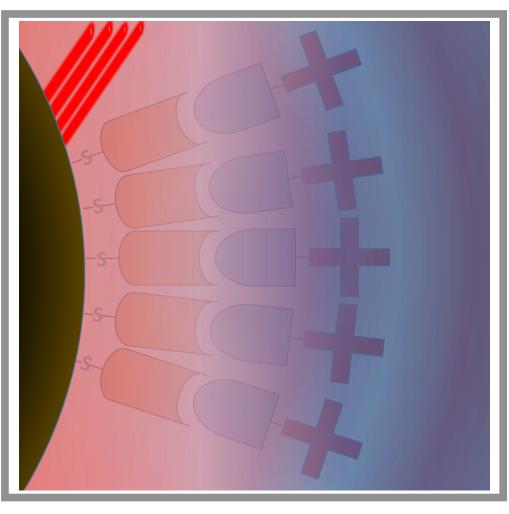


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Detecting the nanoparticles by MRI within a tumour also means that the drug is present, as it's attached to the nanoparticle surface.

Shining the laser on the nanoparticles causes the gold coating to warm up. The linker breaks down at a higher temperature releasing the drug.

This release only occurs where the laser was used, which prevents release at unintended areas reducing or eliminating some side effects associated with chemotherapy.

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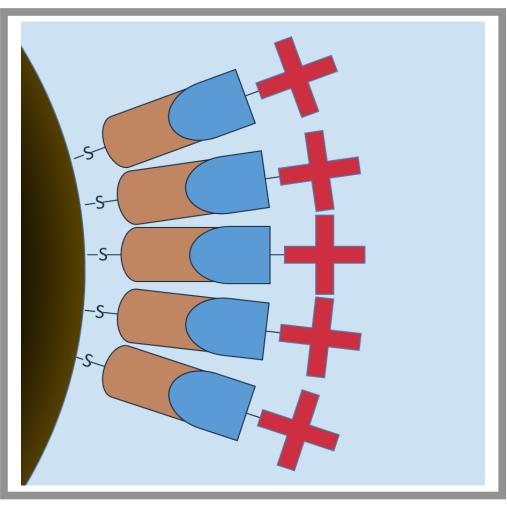
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Particles much smaller than the naked eye (nanoparticles) can display both diagnostic and therapeutic properties (theranostics). Gold coated iron oxide nanoparticles possess a magnetic iron oxide core, rendering it visible under MRI.

The drug is attached to the nanoparticle surface with a heat sensitive linker that breaks down at higher temperatures. The gold coating releases heat when exposed to some light frequencies such as infra red laser light.

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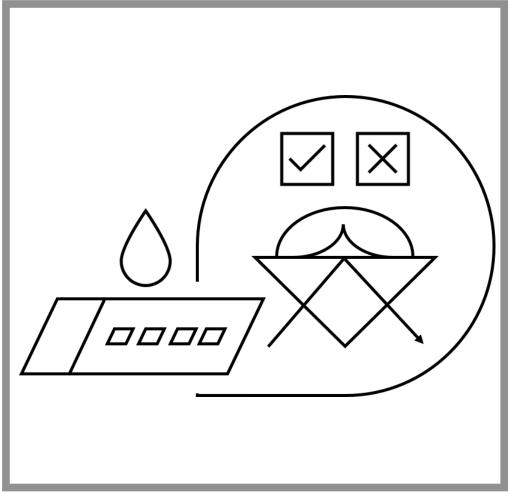


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Human blood serum contains precious diagnostic information for a wide range of pathologies, including pancreatic cancer. We are investigating a new diagnostic tool to help in the early detection of cancer using attenuated total reflection – Fourier transform infrared spectroscopy (ATR-FTIR) and artificial intelligence. A small amount of blood is collected from the patient and the serum is separated, deposited and dried on the special ClinSpec Dx sample slide, analysed with ATR-FTIR, and then machine learning algorithms are subsequently used to distinguish between diseased and healthy patients. This technology has the potential to become a less invasive, rapid, accurate and cost effective diagnostic tool.

This project by Miss Alexandra Sala and Dr Matthew J Baker from the University of Strathclyde and ClinSpec Dx aims to develop a new approach to improve the early detection of pancreatic cancer. For further information: alexandra.sala@strath.ac.uk matthew.baker@clinspecdx.com





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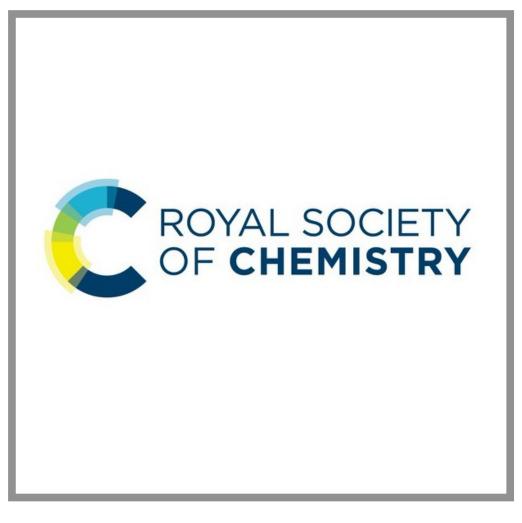


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The Royal Society of Chemistry is a learned society in the United Kingdom with the goal of advancing the chemical sciences. This design is the RSC logo.

The RSC Outreach fund have sponsored the Quilts 4 Cancer project. It has enabled us to reach out to organisations and individuals to spread the word about the excellent work being undertaken in chemistry towards future therapies for pancreatic cancer whilst also producing practical guilts for current sufferers of this devastating disease.





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Purple Rainbow is a charity founded by Lesley Goodburn, the charity raises awareness and fundraises for Pancreatic Cancer UK in memory of Lesley's husband Seth who sadly died of pancreatic cancer. This design is the Purple Rainbow logo. Lesley and the charity also run the Purple Rainbow Support Group that helps people affected by pancreatic cancer across Staffordshire.

For more information on the outstanding work Lesley is doing with Purple Rainbow, or to purchase some of the pottery she sells to raise funding, please visit: https://purplerainbow.co.uk/