

YSJ teacher education diversity and inclusion conference
YSJU York
20 June 2022

Decolonizing the Curriculum

Matharu Plots

From having to delivering on the conversation

Prof Avtar S Matharu, CChem, FRSC
Deputy Director, Green Chemistry of Excellence
Chair, University Staff Race Equality Forum
E-mail: avtar.matharu@york.ac.uk

Research

Industry

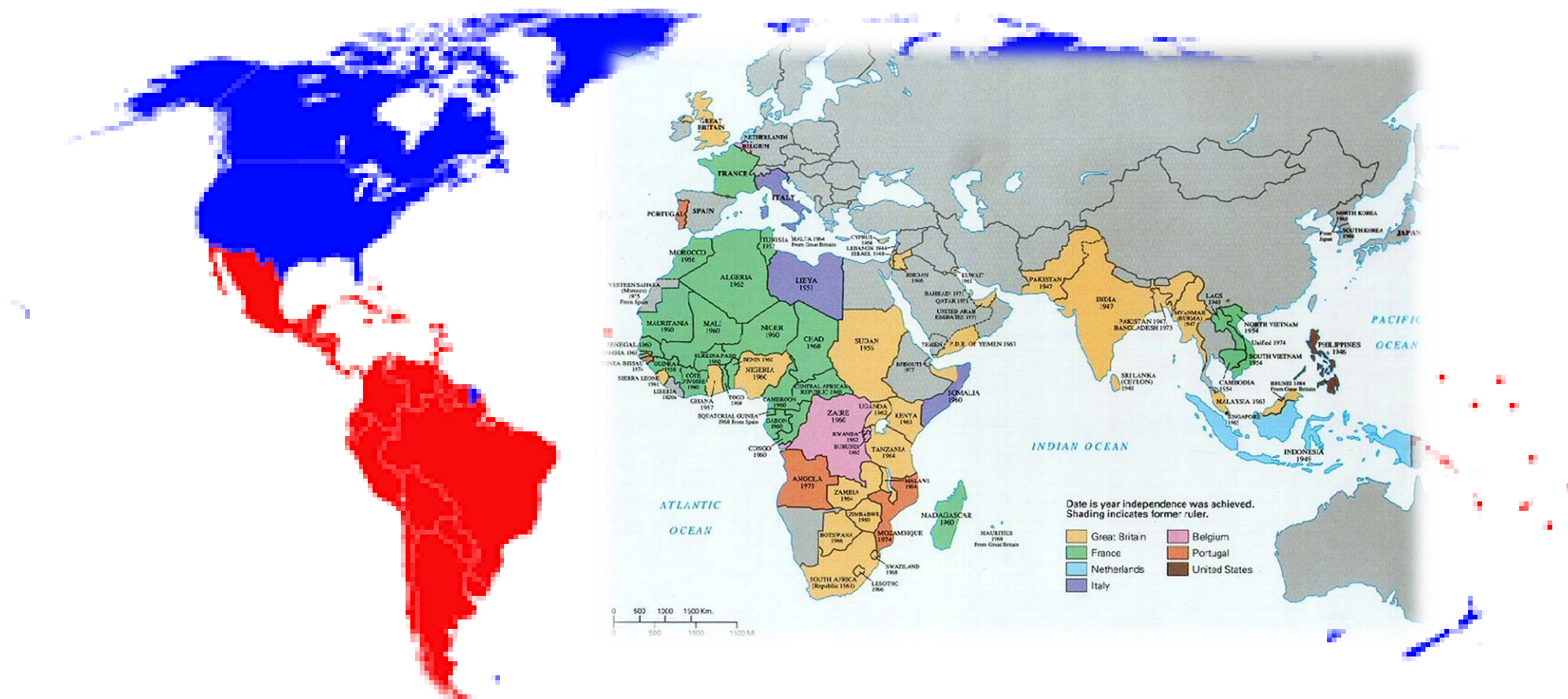
Networking

Education

Our mind's are like parachutes.....
They work best when OPEN!!!!

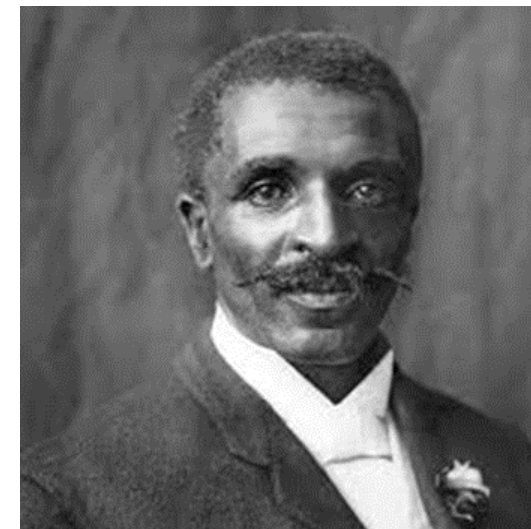
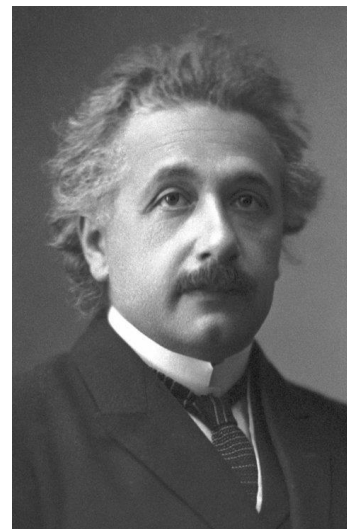


Knowledge is opportunity?



Restricted knowledge is dangerous power

Name your favourite scientist?



DANGEROUS POWER

“Black people are intrinsically less intelligent than whites”

“inherently gloomy about the prospect of Africa” because “all our social policies are based on the fact that their intelligence is the same as ours, whereas all the testing says, not really.”

Moreover, he added, although he wished everyone were equal, “people who have to deal with black employees find this not true.”



“UK universities are institutionally racist”, says leading vice-chancellor

Prof David Richardson cites systemic issues that disproportionately affect black and minority ethnic students

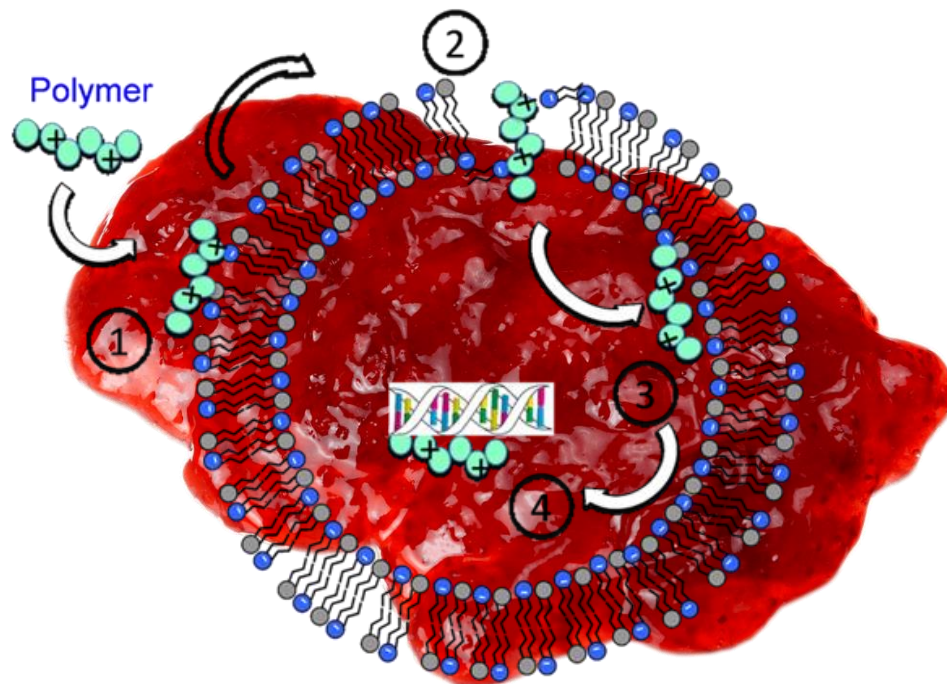
<https://www.theguardian.com/education/2021/apr/28/uk-universities-are-institutionally-racist-says-leading-vice-chancellor>

Black scientists say “UK research is institutionally racist”

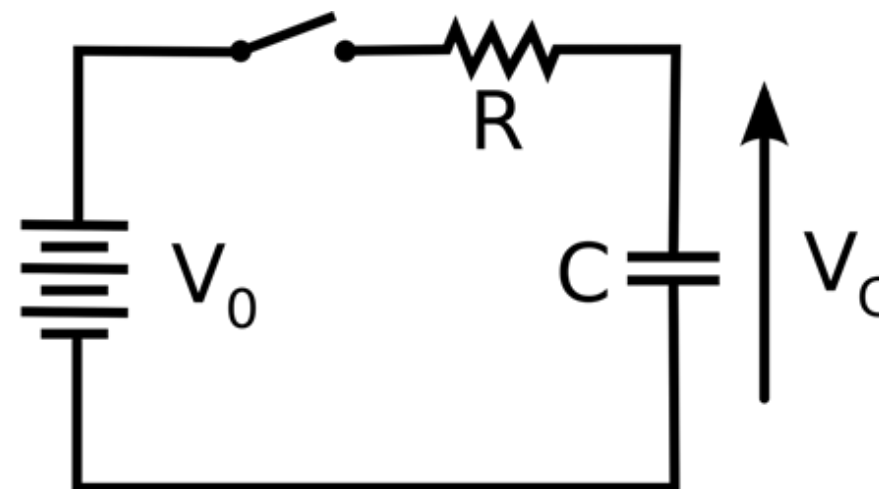
"My credentials and my CV and experience for the position are great, but why is it that someone else has been hired instead of me?", said Dr Scarlett

<https://www.bbc.co.uk/news/science-environment-58795079>

Need to change organisational DNA



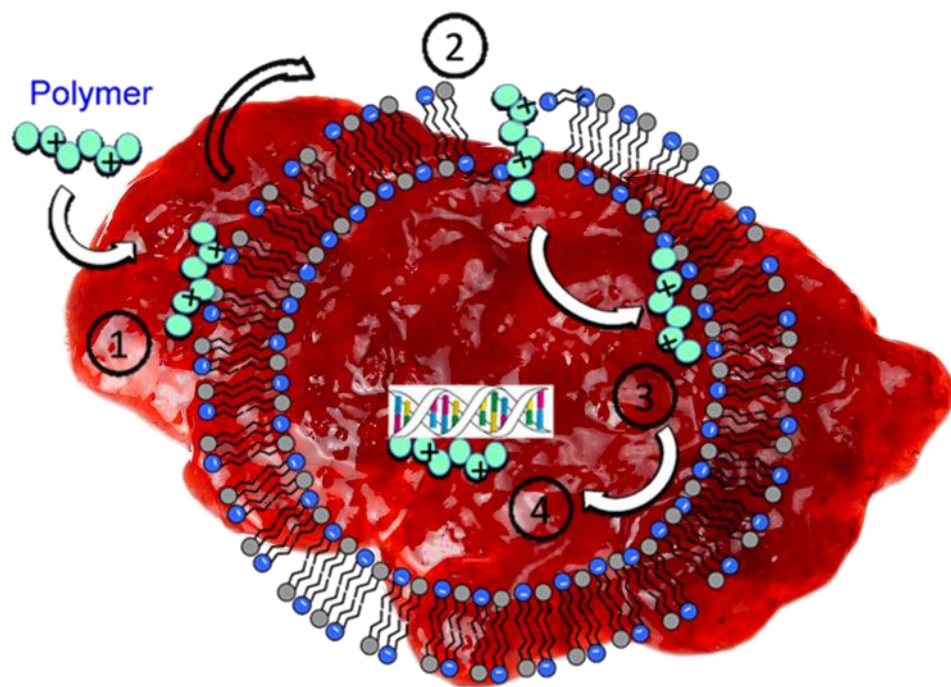
https://www.clipartkey.com/downpng/iiJThx_svg-free-stock-ibm-lab-designs-molecule-circle/



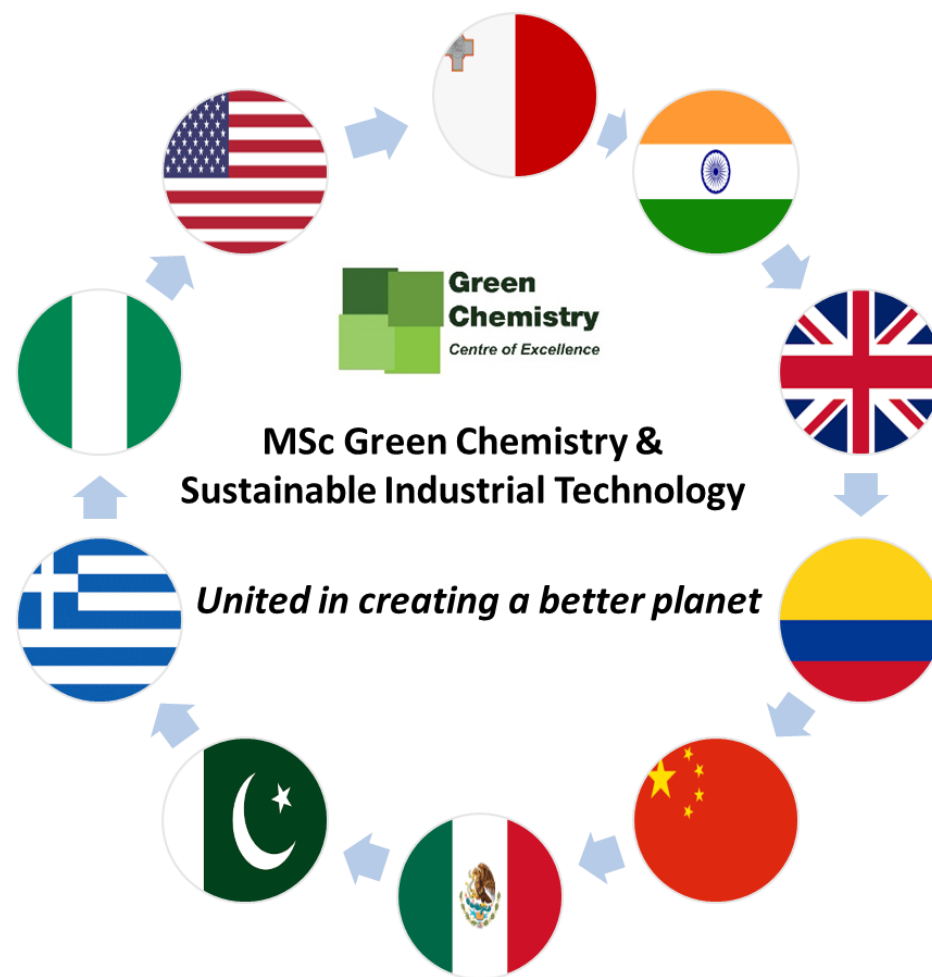
https://www.clipartkey.com/view/wmTbTb_electric-circuits-resistance-of-capacitors-physics-electric-circuit/

Starting a conversation

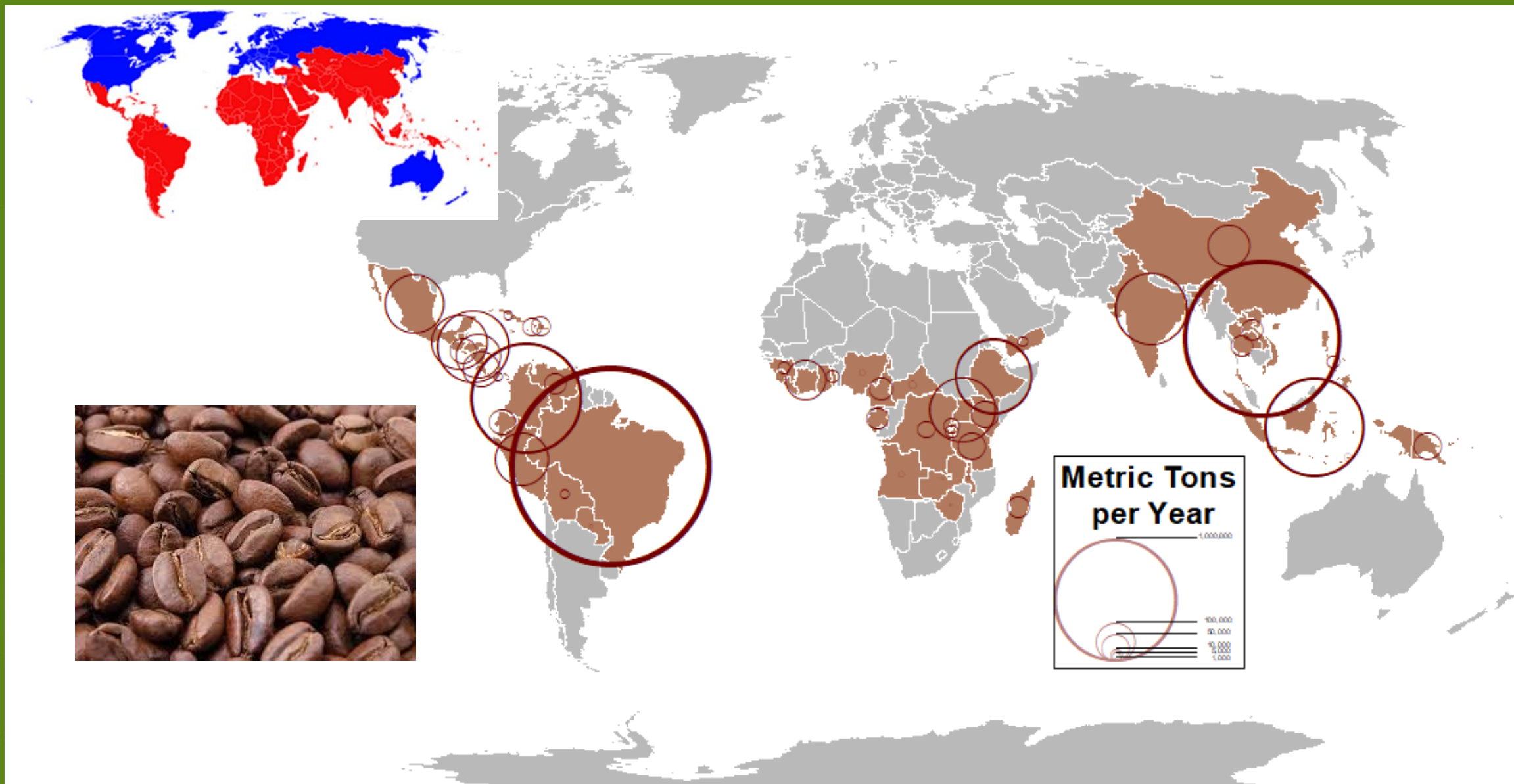
Convincing the sticky middle and changing the culture



https://www.clipartkey.com/downpng/iiJThx_svg-free-stock-ibm-lab-designs-molecule-circle/

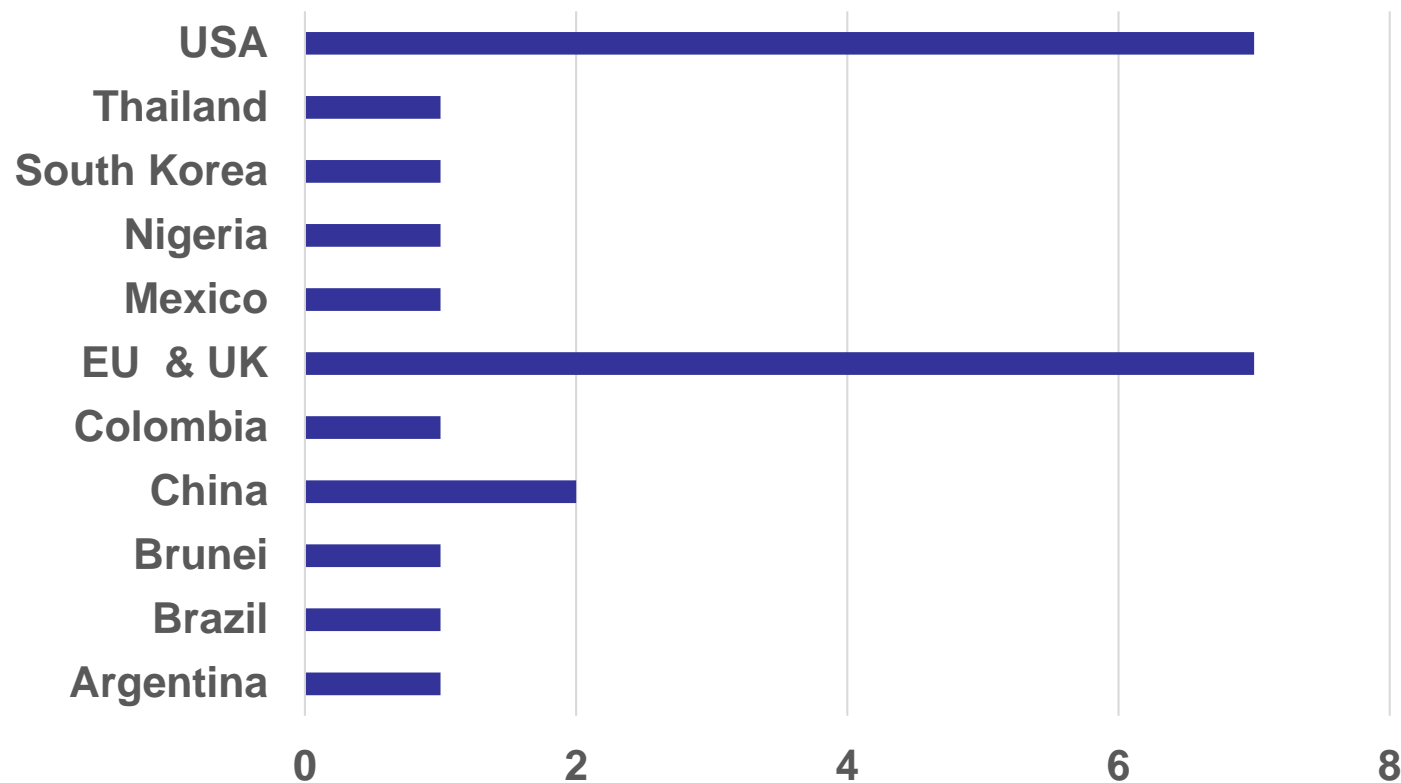


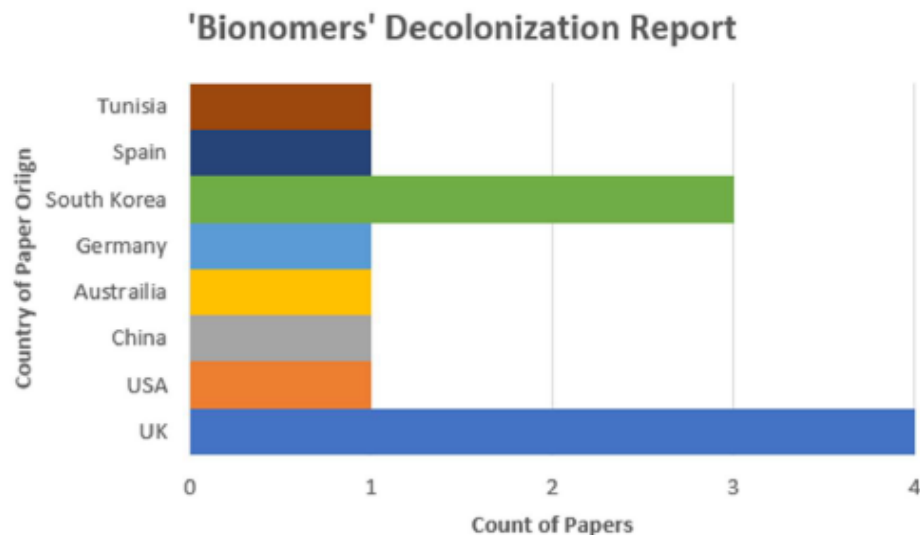
Starting a conversation



Start of Matharu Plots

Frequency of publications by country of corresponding Author





Of the 13 papers included in my literature review, the majority were from the United Kingdom and South Korea. This is slightly skewed as I cited three papers from [redacted] when highlighting the previous work of the group that lead up to this project. Notably, only two of the papers cited came from countries in the Global South (China and Tunisia). I don't know why this is, I certainly didn't turn away from any papers due to national origin. My best guess would be that its down to pure numbers. It seems likely that there are more groups doing chemistry research in Global North countries due to better economic conditions meaning that research is more highly funded. Assuming there is no regional bias toward certain topics in chemistry (An assumption I'm not sure is valid, would the high costs of state-of-the-art instruments for analytical chemistry research cause less analytical research outside of wealthy countries?), then there would be more groups researching and therefore more papers covering the relevant topics. This was an interesting topic to consider while conducting my review and certainly made me think about the origin of papers on a deeper level.

Decolonisation project in the seminar literature

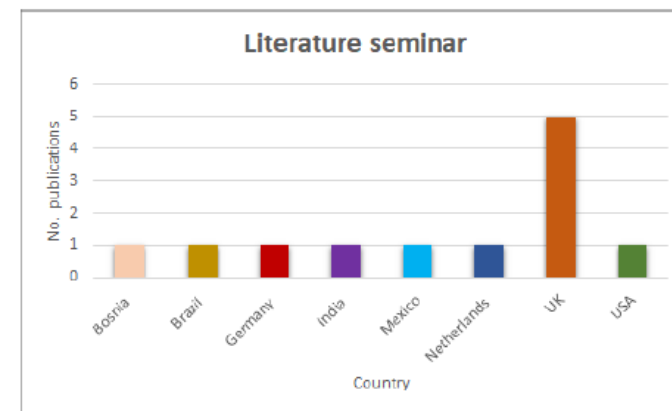


Figure 1. Countries from which the information is coming.

Figure 1 shows the countries in which the publications are coming from. Most of the publication reviewed until this stage is from European countries as the UK, Bosnia, Germany, Netherlands with eight papers. Whereas three other publications are representing North and South American countries like USA, Mexico and Brazil. A single literature paper is coming from the Asian continent. The main reason for this is because that migration to a circular economy for the European Union is essential and has been included as part of the economic policy. Moreover, they have implemented different indicators and monitoring tools to observe the results in micro, meso and macro levels transition. For instance, Germany since 2002 has adopted regulations to promote the circular economy, reduce packaging wastes and increase the protection of natural resources. The transformation in the Netherlands began with the introduction of national programmes, enhancing supply security and independent import of natural resources [1]. In the case of America, the moving to he sustainability has been slow, the main steps involve the use of second-generation bio-wastes to produce liquid biofuels as bio-ethanol [2]. For Latin-American countries, the no utilized wastes production reach 90% and the recycling rates are low in comparison with the USA. These countries face difficulties to transform the linear to a circular economy. The main problem is the lack of information and awareness in citizens, governments and industries to design new processes in which they could dispose of the wastes to transform them as feedstock and replace fossil fuels [3]. Therefore, most of the publications read to this seminar literature were from the countries that have reached higher advances to the migration to a circular economy.

Independent Study Module (100 cp)

A. Research Project Report (90%)	Mark / 300 (will be converted to %)
<u>A1. Project Execution (30%)</u> Practical ability, safe working practices and application Planning and organisation Results obtained – quality and quantity Initiative and independence	100 including 40 20 20 20
<u>A2. Project report: (60%)</u> Abstract/Introduction/literature survey/aims Presentation and writing Green context and relevance to SDGs Analysis/interpretation/critical discussion of results One page infographic on decolonisation of research literature	100 including 15 15 15 45 10
B. Project Area Group report: (10%) Clarity of objectives Achievement of objectives Presentation and writing Green context and SDG context One page infographic on decolonisation of research literature	100 including 10 30 20 30 10

Total
Sources: **88**

Total: 11%
Nigeria 5%
South Africa 5%
Ghana 1%

Total: 1%
Australia 1%

Total: 38%
UK 24%
Turkey 5%
Poland 3%
Russia 2%
Switzerland 1%
Germany 1%
Spain 1%
Portugal 1%

Total: 33%
China 8%
Iran 7%
Malaysia 5%
Indonesia 5%
Korea 2%
Taiwan 2%
Thailand 1%
Pakistan 1%
Bangladesh 1%
India 1%

Total: 17%
• USA 15%
• Mexico 1%
• Cuba 1%

Decolonisation of Research

The largest proportion of research sources stemmed from both Europe (38%) and Asia (33%) with the top 3 countries by contribution being the UK, China and US. One rationale may be that all three are developed countries and well established in terms of research regarding greener technologies.

The research in question focused on carbonaceous porous materials and as such, access to base materials (e.g. biomass) may be an issue. However, the absence of many African countries and of any South America countries (where an abundance of biomass exists), could indicate larger socio-economic factors such as where 'food vs. fuel' is a more prominent concern; or, a simple lack in interest and/or priority by academic institutions.

Additionally, the emphasis on Starbons* (a material developed at the University of York) may have created a disproportional preference towards research sourced from the UK. Therefore, this may not be holistically reflective of the proportion of global research conducted regarding the area of carbon capture.

Asia

Europe

N. America

Oceania

Africa

South Africa
Nigeria
Ghana

Australia

India

Indonesia

Bangladesh

Thailand

Taiwan

Pakistan

Korea

Malaysia

Iran

China

Cuba

USA

Mexico

Russia

Poland

Switzerland

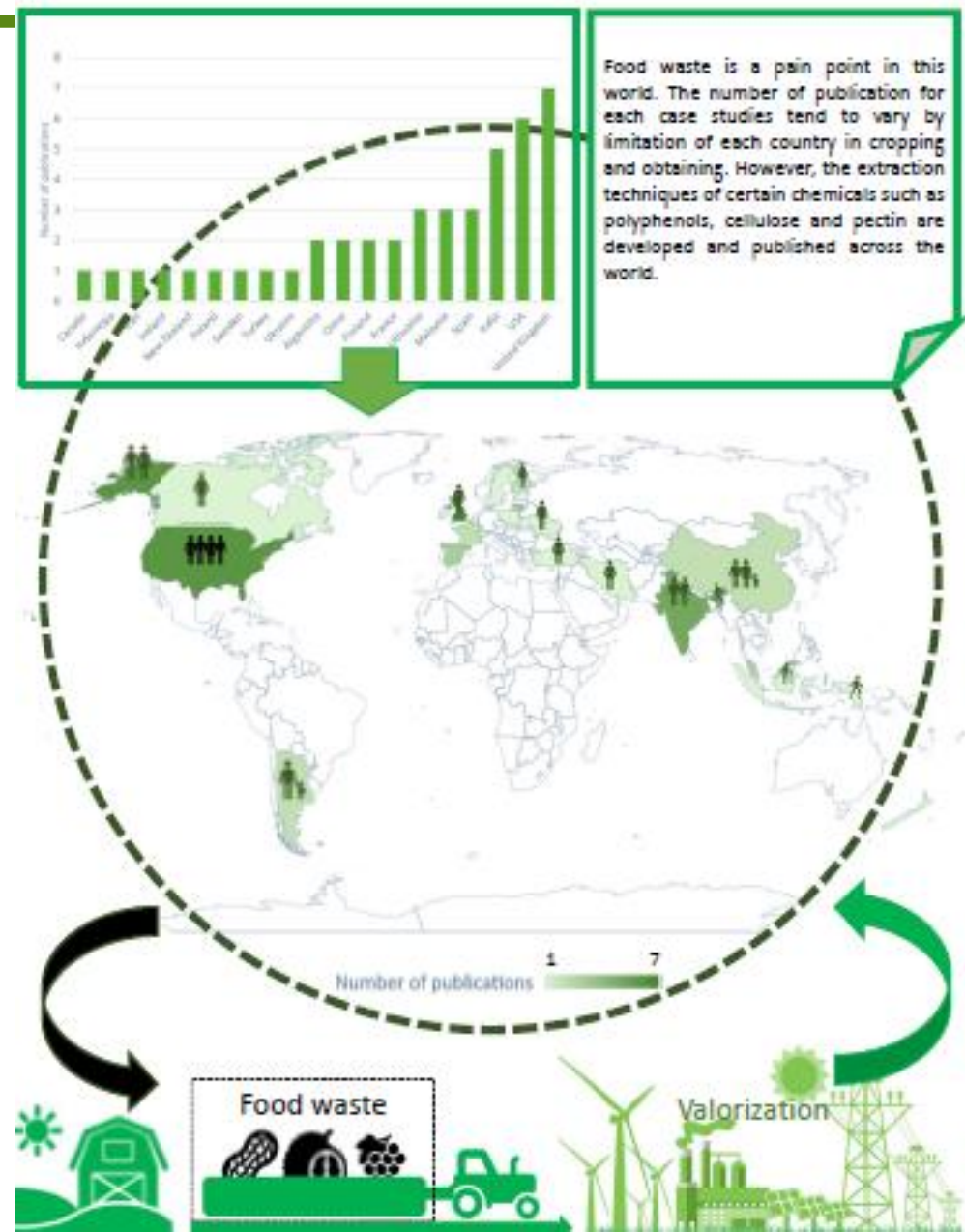
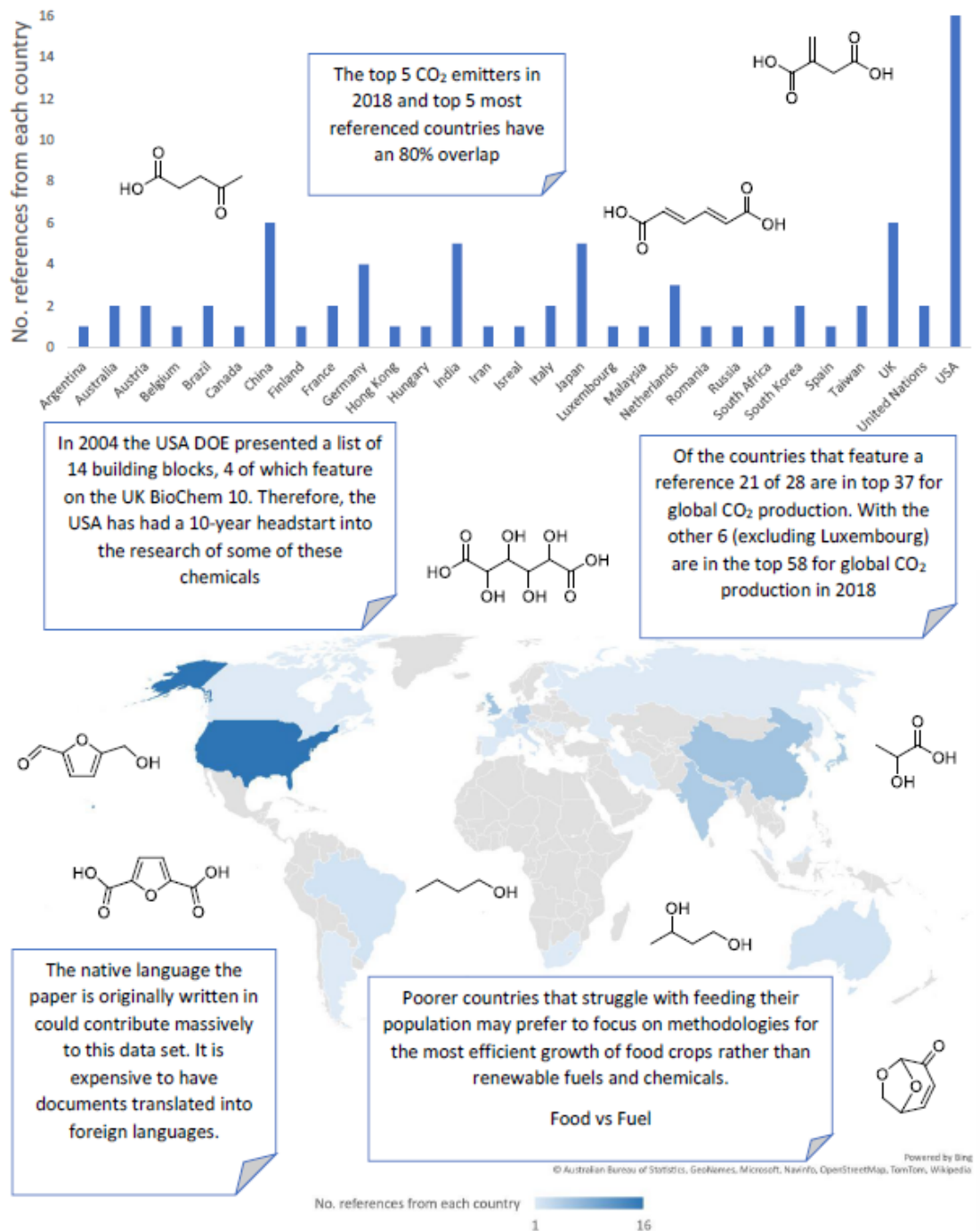
Germany

Spain

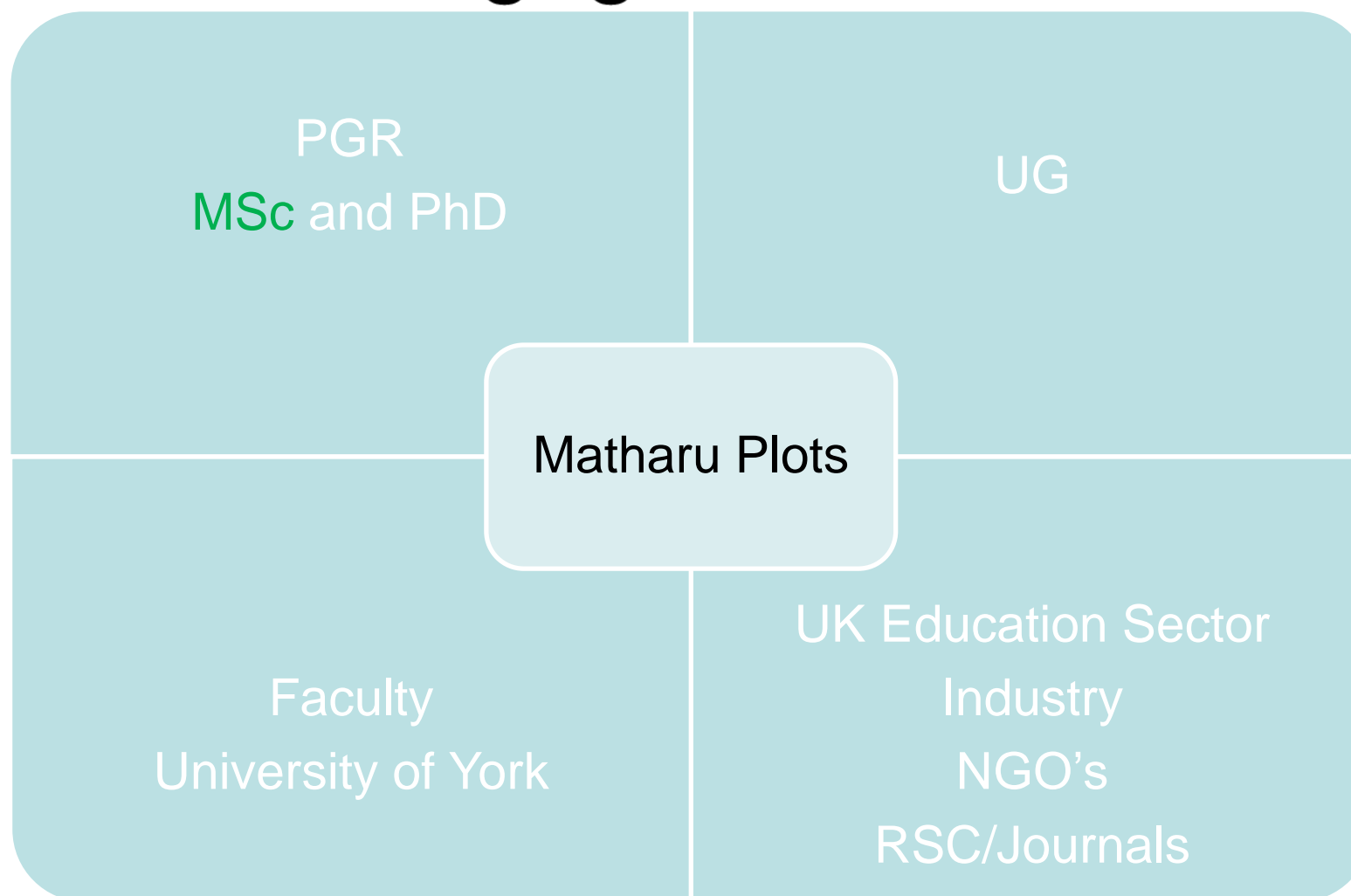
Portugal

Turkey

United Kingdom



Changing the Culture



YSJ teacher education diversity and inclusion conference
YSJU York
20 June 2022

Decolonizing the Curriculum

Matharu Plots

THANK YOU FOR LISTENING
and please carry having and delivering on the conversation

Prof Avtar S Matharu, CChem, FRSC
Deputy Director, Green Chemistry of Excellence
Chair, University Staff Race Equality Forum
E-mail: avtar.matharu@york.ac.uk

Research

Industry

Networking

Education