



The University of
Nottingham

UNITED KINGDOM • CHINA • MALAYSIA

Green Chemistry & Education

Martyn Poliakoff

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Where my father lived as a child



About me!

- **Research Professor in Chemistry,
working in Green Chemistry**
- **Born London (UK) 1947 (Russian father)**
- **Studied in Cambridge, worked in
Newcastle**
- **Have been at Nottingham since 1979**
- **My son is a high school Physics teacher**

**Simon Poliakoff ,
Head of Physics,
Dame Alice Owen School, England**





The University of
Nottingham

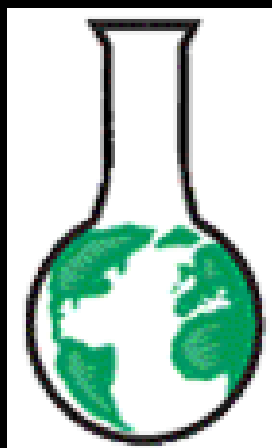
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**Where's
Nottingham?**



Green Chemistry

Cleaner approaches to
making chemicals & materials

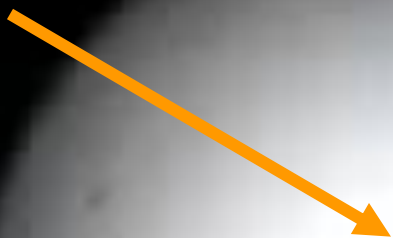


Cleaner solvents

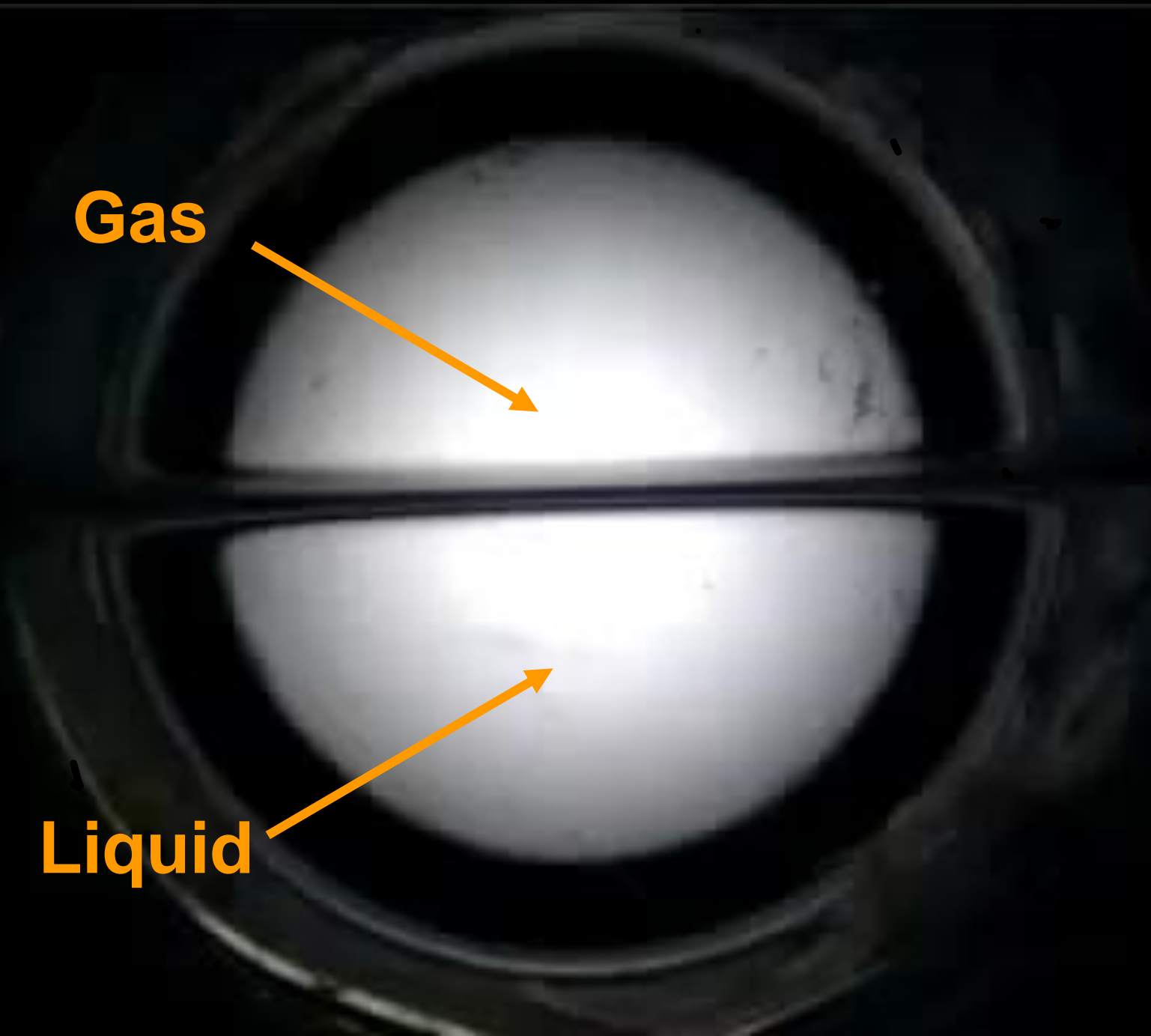
Supercritical Fluids

Highly compressed CO_2 or H_2O
which can be used as solvents
for reactions

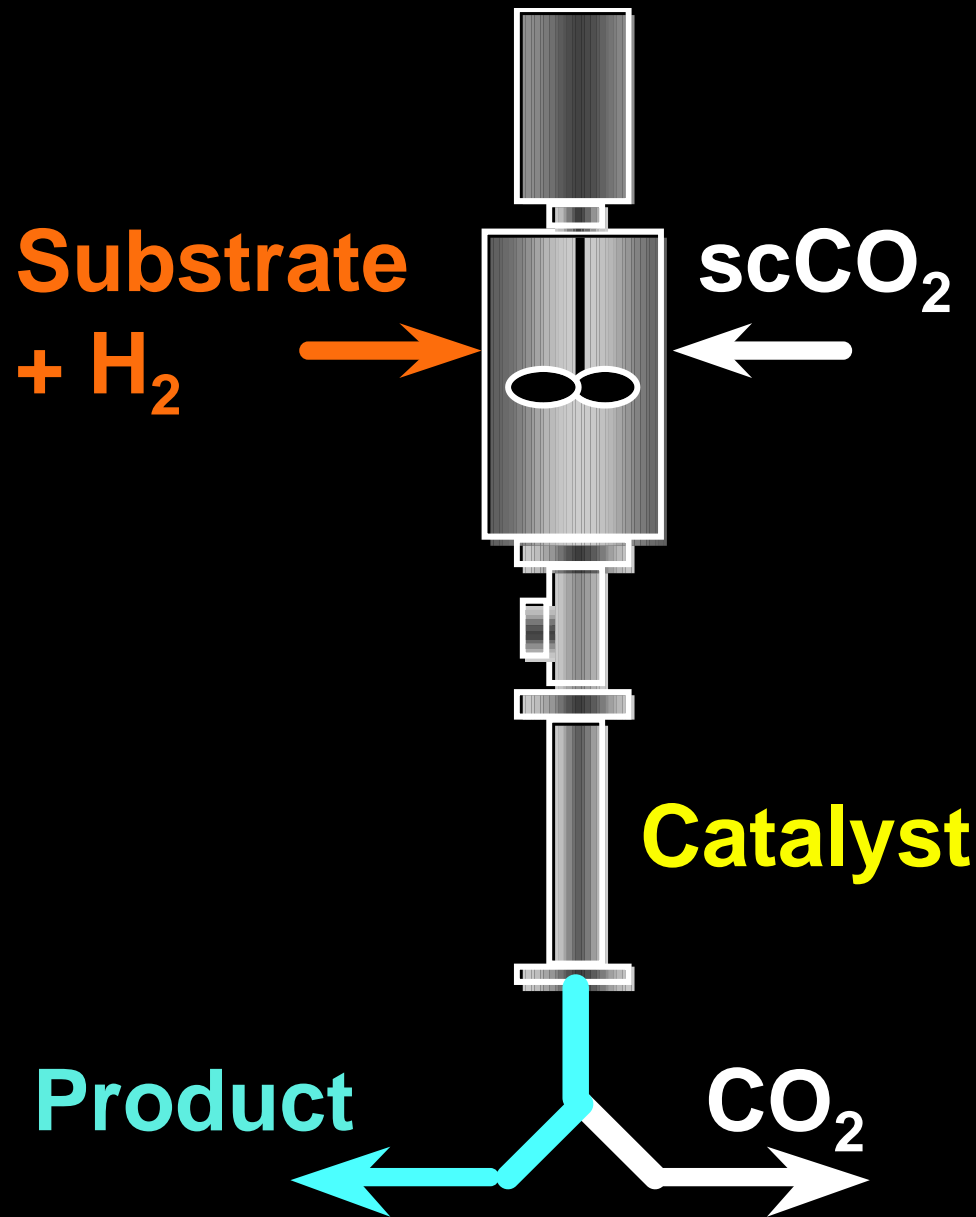
Gas



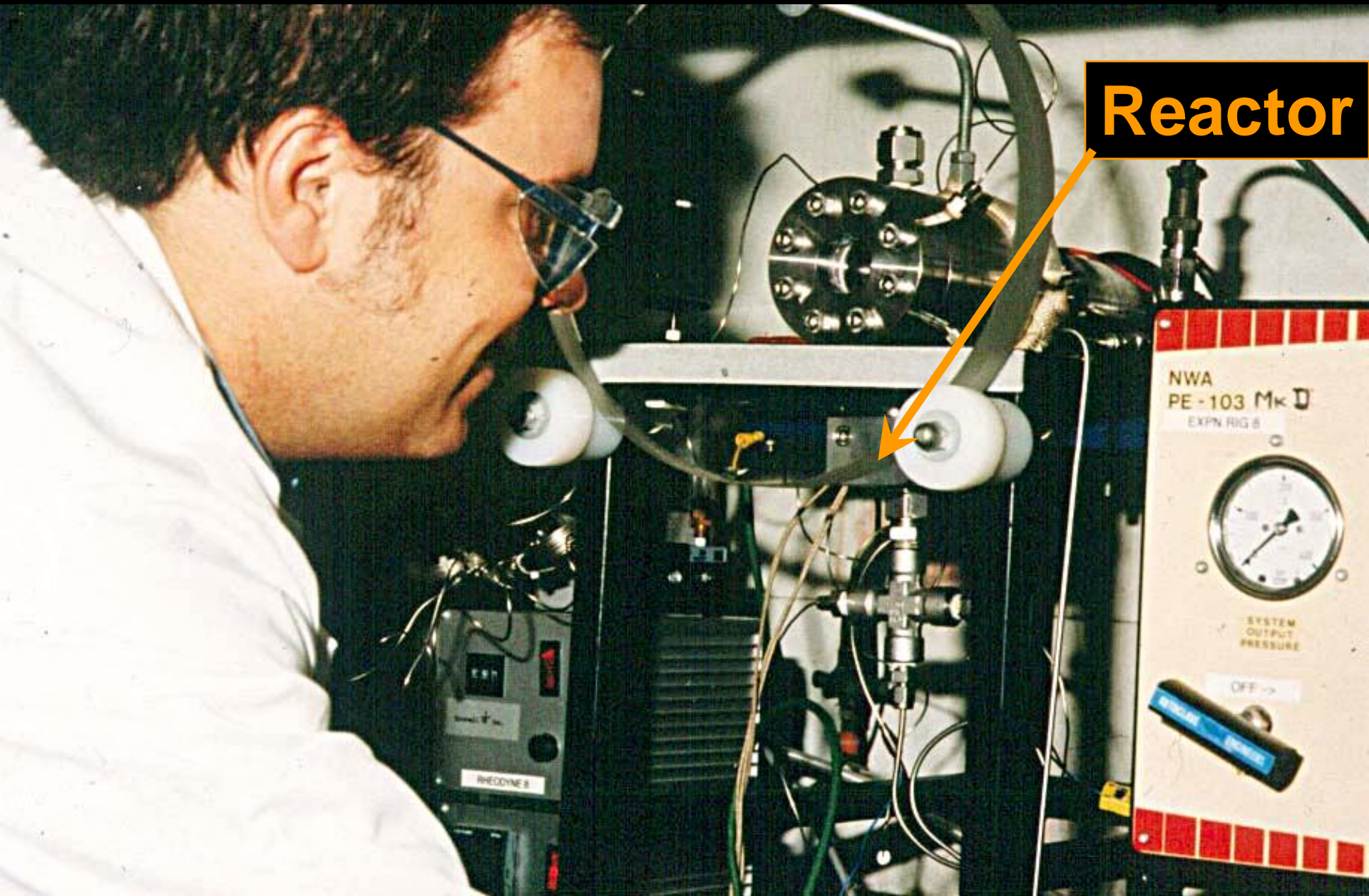
Liquid



Continuous Supercritical Hydrogenation



Pete Licence and Lab Reactor



Reactor

NWA
PE-103 Mk II
EXPN RIG 8



SYSTEM
OUTPUT
PRESSURE



scCO₂ Chemical Plant

- continuous
- multipurpose
- 1000 ton p.a.

**Thomas Swan
& Co Ltd**



Mike George's Idea: Photochemistry O₂/SCF



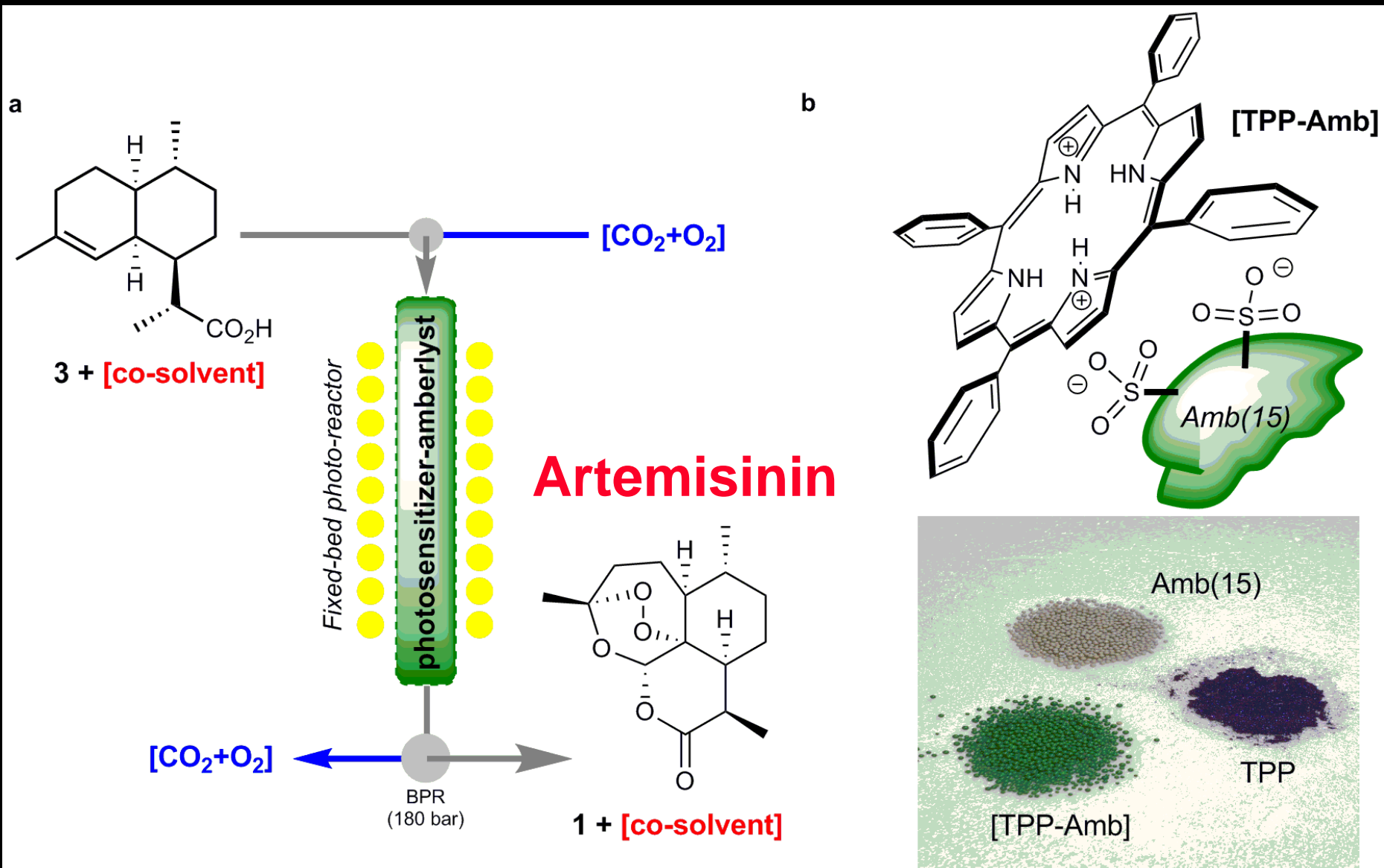
$T < T_c$



$T > T_c$

**High Concentration of O₂ in SCF
AND scCO₂ is non-flammable!**

Making antimicrobials in scCO₂



Supercritical Fluids in the Victoria Shopping Centre



Supercritical Fluids on TestTube



Broadcast Yourself™

Worldwide (All) | English

Sign Up | QuickList (0) | Help | Sign In

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Supercritical fluids



Rate: ★★★★★ 20 ratings

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From: [nottinghamscience](#)

Added: April 28, 2008

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Is it a liquid? Is it a gas? Professor Martyn Poliak...

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00:31 From: [sjalt](#)

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Views: 131,191



[supercritical CO2](#)

00:41 From: [ruudoleo](#)

Views: 554



[Polonium - Periodic Table of Videos](#)

Brady Haran, video journalist



THE PERIODIC TABLE OF VIDEOS



The University of
Nottingham



Click on any element to launch video

= recently updated

H																	He
Li	Be											B	C	N	O	F	Ne
Na	Mg											Al	Si	P	S	Cl	Ar
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe
Cs	Ba	*	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn
Fr	Ra	**	Rf	Db	Sg	Bh	Hs	Mt	Ds	Rg	Uub	Uut	Uuq	Uup	Uuh	Uus	Uuo
		*	La	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu
		**	Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr

THE PERIODIC TABLE OF VIDEOS



ELEMENT: Hydrogen

SYMBOL: H

ATOMIC NUMBER: 1

[Previous element](#) [Close window](#) [Next element](#)



Periodic Table of Videos

- Filming started June 9th 08
- **Website completed July 17th 08**
- 120 videos for 118 elements
- Total film time 4 hours 7 min

Starring role on YouTube

Tim Reynolds
 Martyn Poliakoff, Nottingham University, UK, opened the second European Chemical Congress in Turin, Italy, co-organised by EuCheMS (European Association for Chemical and Molecular Sciences) and the 'other' SCI (Societa Chimica Italiana) with a discussion of his remarkable success in promoting chemistry on the YouTube video website.

Poliakoff and his research team star in over 120 short videos that describe the history



BBC Home News Sport Radio TV Weather Languages

BBC TURKISH.com

Yardım | Sadece metin | BBCTurkish.com'u ana sayfam yap

Son güncelleme: 16 Temmuz, 2008 - TSİ 13:33

✉ Bu sayfayı arkadaşşıma gönder 🖨 Yazıcı için

Haberler
Basın Özeti
Dünyaya Açılan Pencere
Özel Dosyalar
Haberlerle İngilizce

Periyodik tablo internette 'canlandı'

İngiltere'de bir üniversite kimyaya olan ilgiyi artırmak için daha önce denenmiş bir yöntemle başvurdu.

BBC TÜRKÇE RADYO Nottingham Üniversitesi'nden

הסימנייה

עושה הנפלאות מנוטינגהאם

פרופסור בריטי הופך את טבלת היסודות המחזורית ללהיט רשת רותח

את הטבלה המחזורית, שמציגה את היסודות שמרכיבים את כל החומר בסביבה, ניסח במאה ה-19 הכימאי הרוסי דמיטרי מנדלייב. בניקונים קלים הוכיחה עצמה הטבלה בתחילת המאה ה-20, אבל תכונותיהם של יסודות שטרם התגלו כשהומצאה הטבלה. אצל מנדלייב, לך תשכנע תלמידים, או אפילו את עצמך, בקסם שמסתתר בשורות-שורות של מספרים ואותיות לטיניות. אז אוניברסיטת נוטינגהאם הלכה ושכנעה: היא לוקחה את הטבלה המחזורית והצמידה לה סרטונים שבהם מדען עושה ניסויים מוזיקליים עם היסודות השונים. את הניסויים מבצע הכימאי פרופ' מרטין פוליאקוף, איש המרכז משקפיים ענקיים שנשמע כמו גברת בריטית בשעת התה ונראה כאילו ביקש מהספר 'תעשה לי תספורת אלברט איינשטיין, אבל שיהיה פרוע'.

בניסוי של הליום, למשל, מצוין פוליאקוף בהנאה בלון מלא הליום, שמתפוצץ ובוער בעליזות. הנתרן לעומתו הוא הגרסה הכימית של המריקה בכיכר ריינג'ון:

כשמכניסים אותו למים, הוא מתחיל לבעור. אחר כך הוא מתפוצץ. כמעט 2 מיליון גולשים כבר צפו בניסויים החמודים, ואתר ווב 2.0 אמיתי, יש באתר גם סטטיסטיקות בזמן אמת. בזמן ליום המישי בצורהיים, היסודות הכי פופולריים אצל הגולשים הם סודיום (a), הליום (He) והיסוד התיבי עליי – המוצץ (O).

www.periodicvideos.com

עידו קינן

עושה קסמים עם סודיום. פרופ' פוליאקוף

Mail Online

sciencetech

Fizz, bang, whoosh ... British scientists turn Periodic Table into a must-see internet hit



ДЕЛОВАЯ ПРЕССА

Главная О проекте Партнеры Рассылка Свидетельства СМИ Реклама Контакты

НОВЫЕ ТЕХНОЛОГИИ номер 63 (436)- 64 (436) от 01.08.2008

Архив Яндекс Директ

Education

September 15, 2008
 Volume 86, Number 37
 pp. 42-43

Elements Achieve Internet Stardom

Video clips featuring the periodic table of the elements strike a chord with YouTube fans

Stephen K. Ritter

videos w
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 ty, over a
 http://netw
 ums/ukp
 re.com/
 s.nature.



Internet sitesi periyodik tabloyu öğrenciler için ilginç kılacak bir yöntem olarak değerlendiriliyor

**“I don’t care what
they do, as long as
they keep making
videos!”**

Viewer’s comment late July 2008

Extras



Nobel Prize



Hadron



Olympics

Gold, Silver, Bronze (41,094 in 2 months)
Helium & LHC (68,668 in 2 weeks)
Nobel Prize 2008 (39,027 in 1 week)

Cheeseburger in HCl (5 million in 21 days)
Gold Bullion Vault (2 million in 15 days)
Candles at Halloween (226,213 in 3 days)
Tea Chemistry (123,770 in 3 days)

1,137,999 subs at 21-18, Feb 2nd 2018

Taking things forward

Developing PTOV

**Building up the number
of YouTube Subscribers**

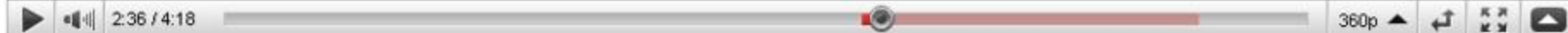
Roentgenium - Periodic Table of Videos

PERIODIC VIDEOS



234 videos

Subscribe



periodicvideos — 22 March 2010 — Roentgenium is element number 111 and was created at GSI in Germany, where we made this film. More at <http://www...>



11,158
views





2017
 ^{118}Og

JINR
114 Fl
FLN

THE PERIODIC TABLE OF VIDEOS



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MOLECULAR VIDEOS supported by [EPSRC](#)



Chem Garden



Death Factor



Carvone



Concrete



Frog Poison



Viagra



Traffic Lights



CO₂ (part 1)



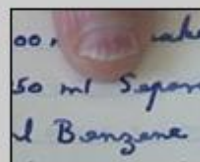
CO₂ (part 2)



Cheeseburger



BBR₃



Benzene



HCl (part 1)



HCl (part 2)



Methane



Heavy Water



Fire Water



Gun Cotton



Sulfuric Acid



Planar Methane



Ferrocene



Snowdon



W/Phosphorus



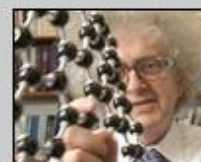
More P₄



Morphine



Penicillin



Graphene



More D₂O



Aqua Regia



Red Sludge

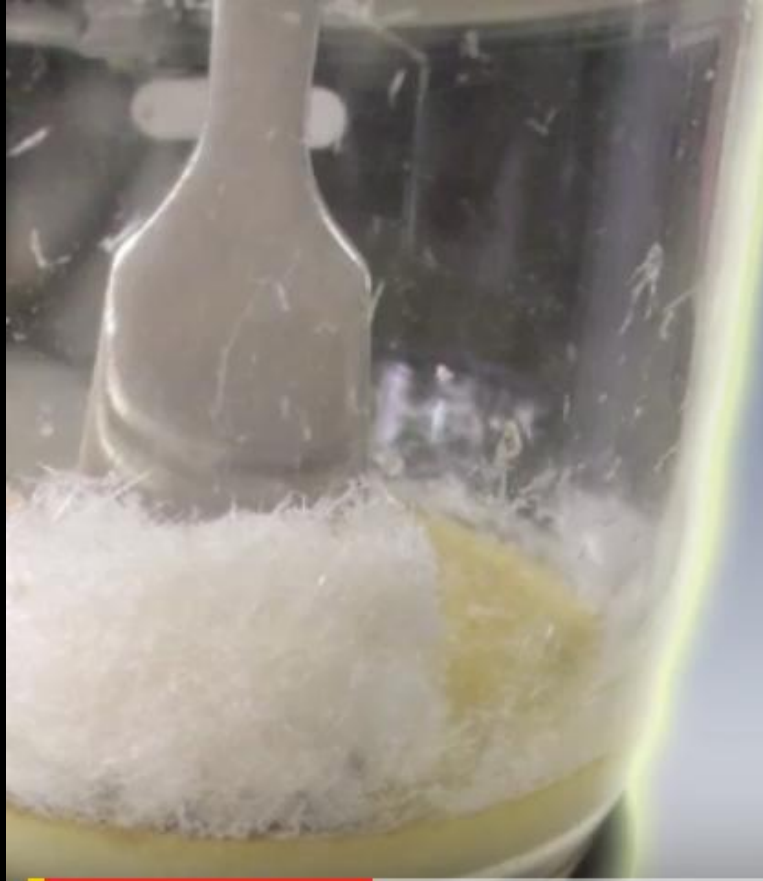
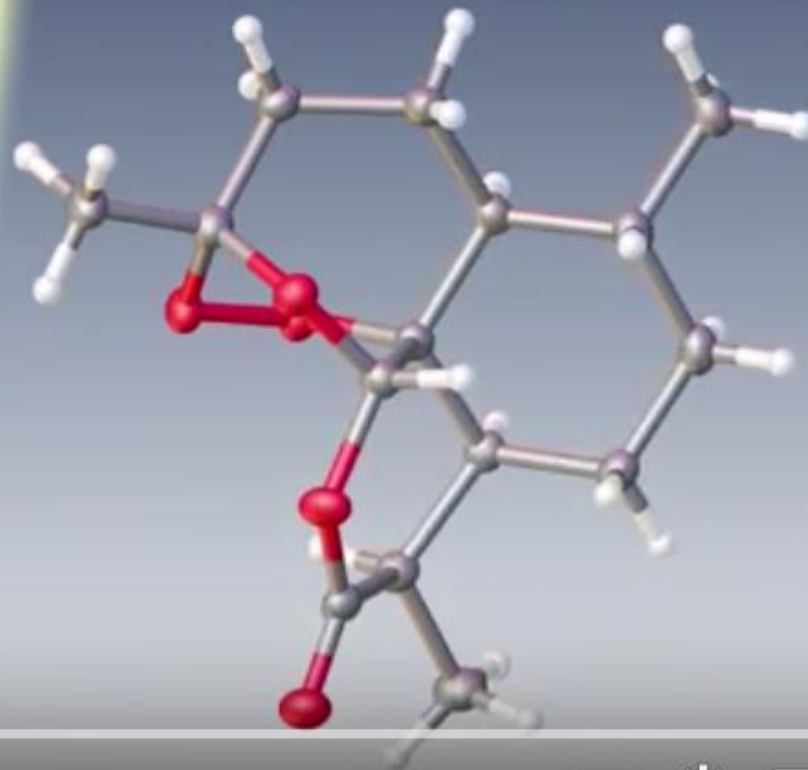


Buckyball

www.periodicvideos.com



Artemisinin



1:42 / 8:21



Fighting Malaria with Green Chemistry (Artemisinin) - Periodic Table of Videos

www.periodicvideos.com

106 Pd 106.42 Palladium	108 Ag 107.87 Silver
78 Pt 195.08 Platinum	79 Au 196.97 Gold

Periodic Videos



Subscribe

767K

99,840

E-mail received 5th July 2017

- I'm a student at Le Quy Don high school, Ho Chi Minh City, Viet Nam and I have a strong passion with Chemistry, especially Green Chemistry....
- **I'm having a research in artemisinin, the anti-malarial drug that i got inspired from periodic videos....**
- I have a trouble with the scCO₂ reactor because green chemistry in Viet Nam is not strong enough, so I'm asking for your help if you have any spare time...

**Are we making any
impact?**

***B. Haran, M. Poliakoff,
nature chemistry 3 (2011) 180***

Assessing Impact

- Number of views?
- Number of Subscribers?
- **Comments**

Message from Andrey 3/09/12

I am a student from Russia studying at Oklahoma State University, USA ...

It is really exciting for me to watch your videos.....

Большого Вам здоровья и успехов в Вашей научной и просветительской работе. Спасибо за Вашу работу и за то, что Вы есть!

Viewer Pictures - Periodic Table of Videos

PERIODIC VIDEOS

352 videos

Subscribe



Our youngest viewer – 18 months old

Kuala Lumpur 2/05/18

Daigo, aged 7



Note from Diago, 2nd May 2018

Dear Sir Poliakoff
I love your
videos and I loved
when you breathed in
helium and had a
cute voice. I want to
to be a chemist like
you.

From
Diago



Periodic Table of Videos

- Unique – nothing like it
- **Good publicity for Nottingham**
- One of most popular science channels on YouTube
- **Big scope to develop in future**
- **Makes Chemistry fun!!!**

The PTOV Team



SPORE Winners, May 2011, *Science*, 332, 1046



The University of
Nottingham

www.periodicvideos.com

Martyn Poliakoff, Brady Haran,
Pete Licence, Steve Liddle, Sam Tang,
Debbie Kays, Darren Walsh, John Moses,
Rob Stockman and Neil Barnes

***EPSRC, U Nottingham, Briggs plc, RSC,
Aldrich Chemicals, Garfield Weston
Foundation, Anamax Charitable Foundation***

