



The 21st Century: The Age of Biology

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**Each Century has been coined by
scientific and technological
progress**

The 19th Century: The Age of Engineering

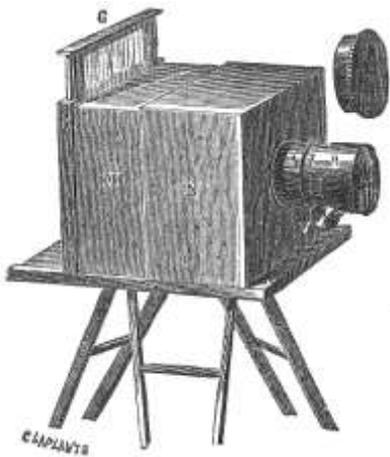
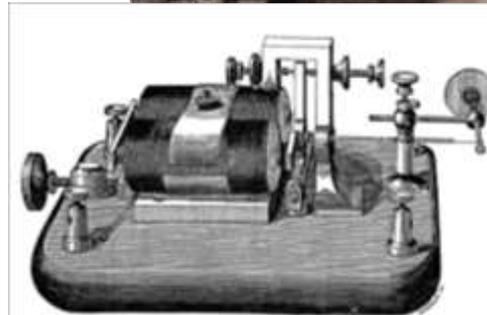
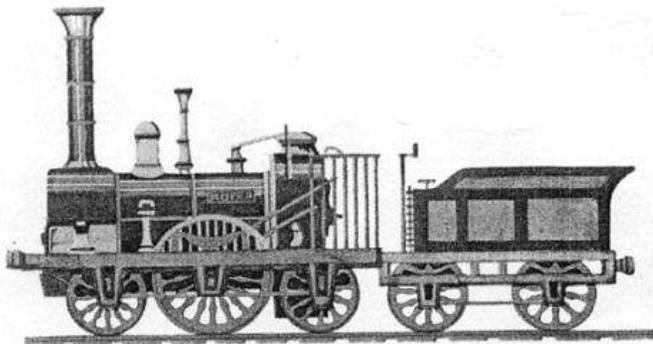
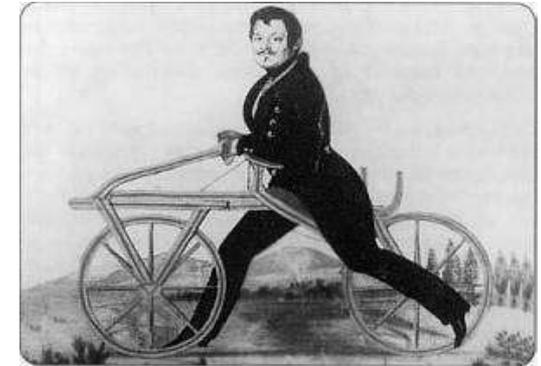
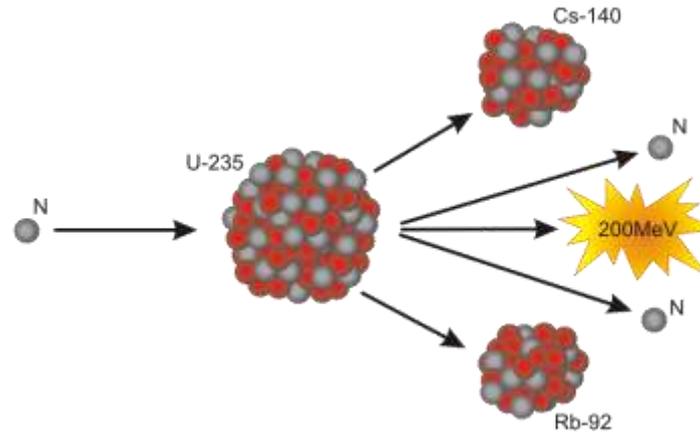


Fig. 327.

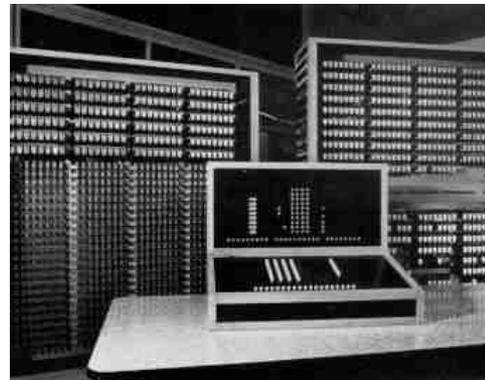
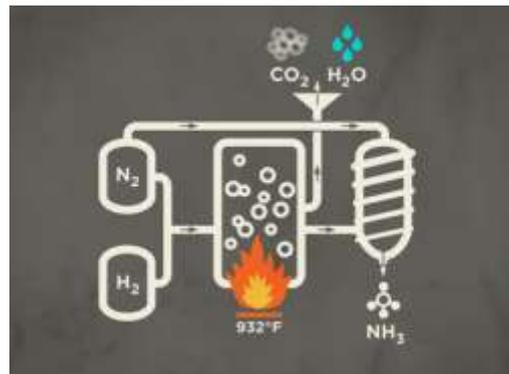




The 20th Century: The Age of Chemistry and Physics

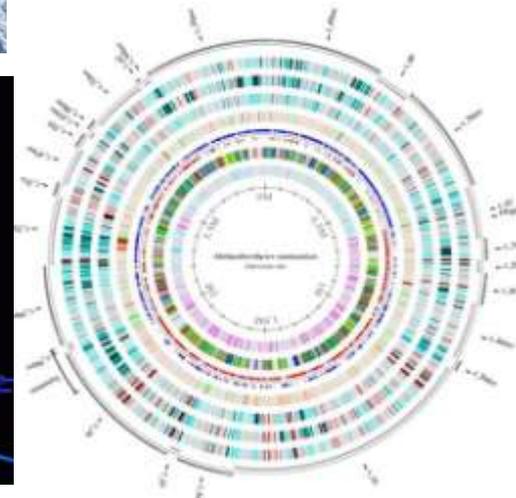
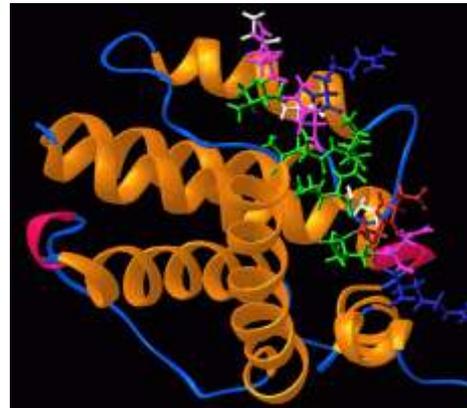
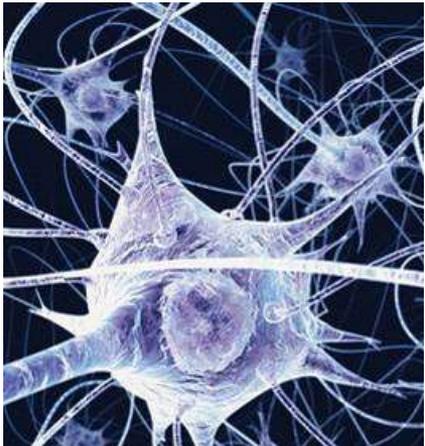
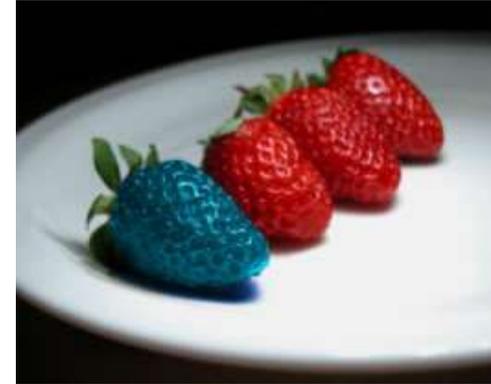
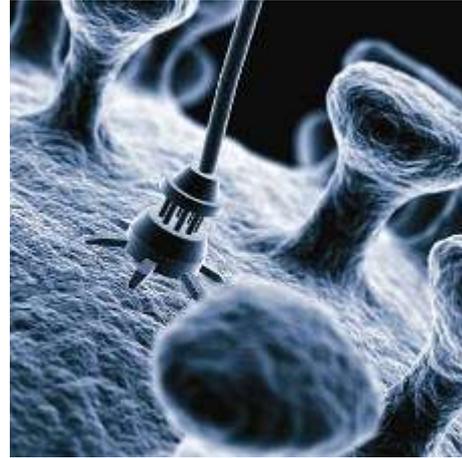
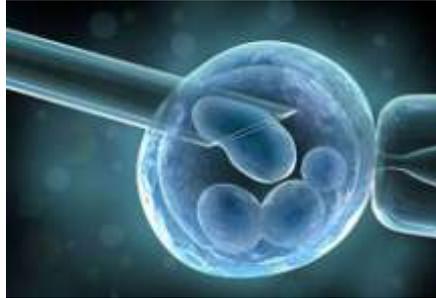


$$E = m \cdot c^2$$





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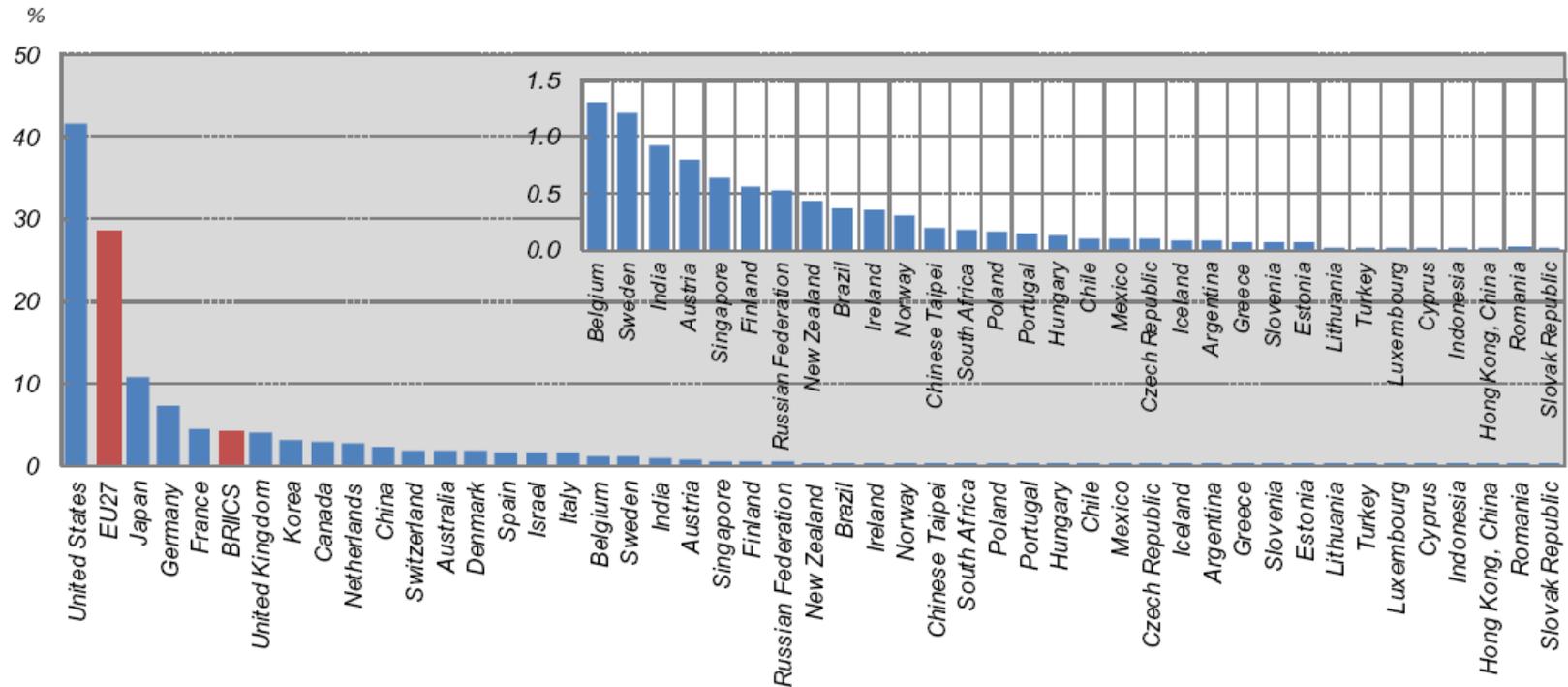


Life sciences play a key role in tackling global challenges





KBI 11. Share of countries in biotechnology patents filed under PCT, 2007-09



BRIICS: Brazil, the Russian Federation, India, Indonesia, China and South Africa.

StatLink <http://www.oecd.org/dataoecd/41/46/48719943.xls>

**And the European Union is
in a key position to deliver**



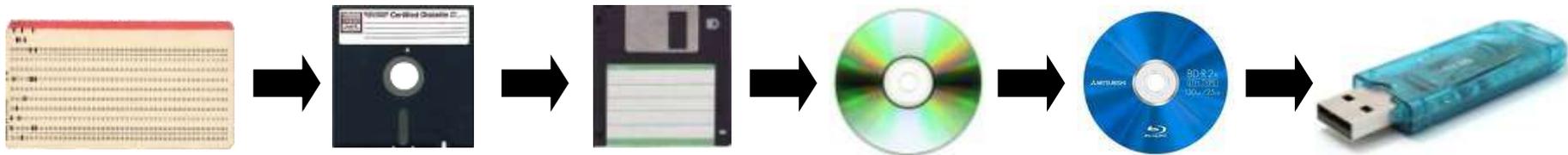
Life sciences offer exciting opportunities, e.g.:

- **Reproducing organs using stem cells**
- **Merging natural and synthetic tissues**
- **Applying personalised medicine**
- **Repairing genetic disorders**
- **Curing neurodegenerative diseases**
- **Deploying nanotechnologies in medicine**
- **Enhancing crops with biotechnologies (e.g. drought resistant plants)**
- **Producing 3rd and 4th generation biofuels**



But: Many people are rather reluctant or even opposed to new technologies

- **The world has become much more complex (and, hence, confusing)**
- **The pace of technological change has increased**

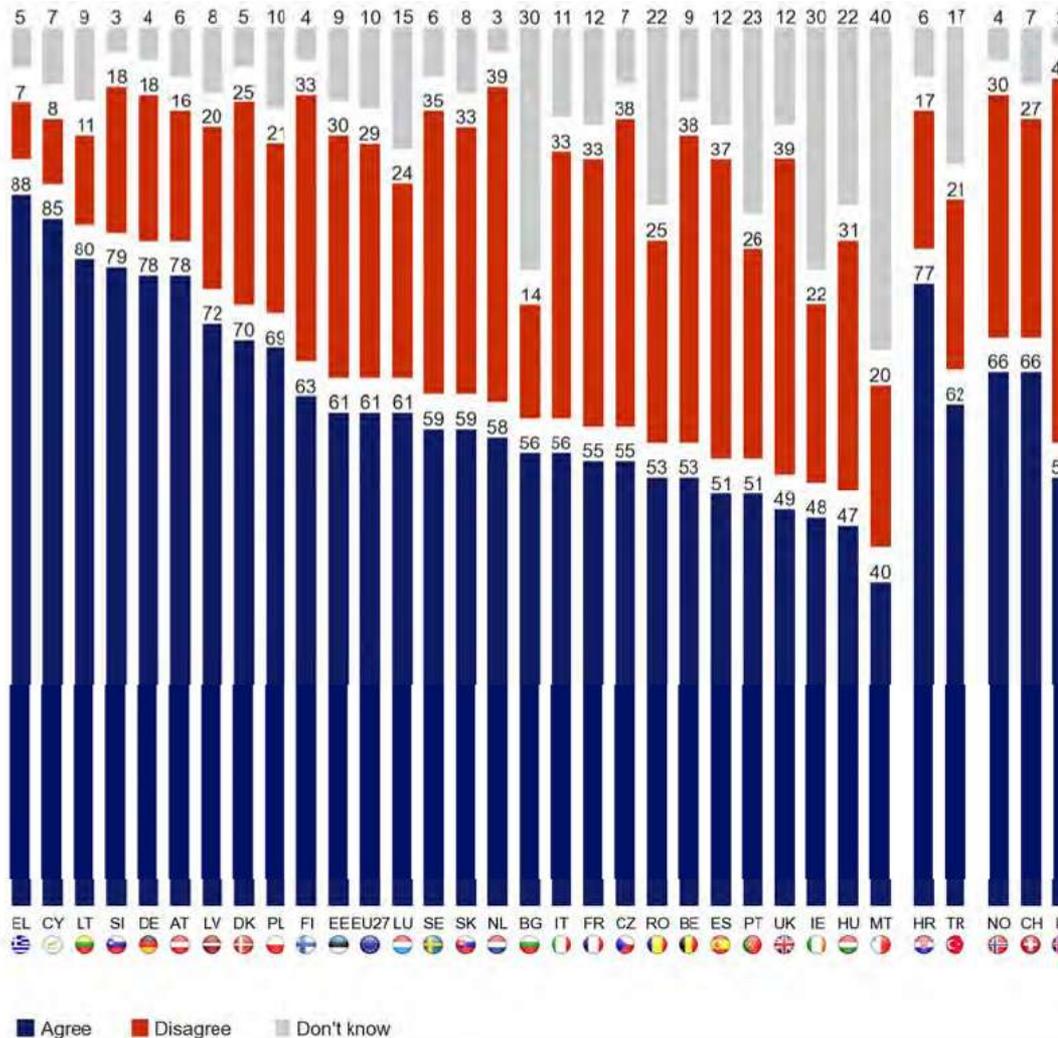


- **Lack of information about the benefits of new technologies vis-à-vis the risks**



European Commission

"GM food makes you feel uneasy"



Source:
Eurobarometer
Survey No. 341,
Oct. 2010



What do we need to fully deploy the opportunities offered by life sciences?

- **Smart scientists who develop**
- **Smart politicians who regulate**
- **Smart citizens who accept**



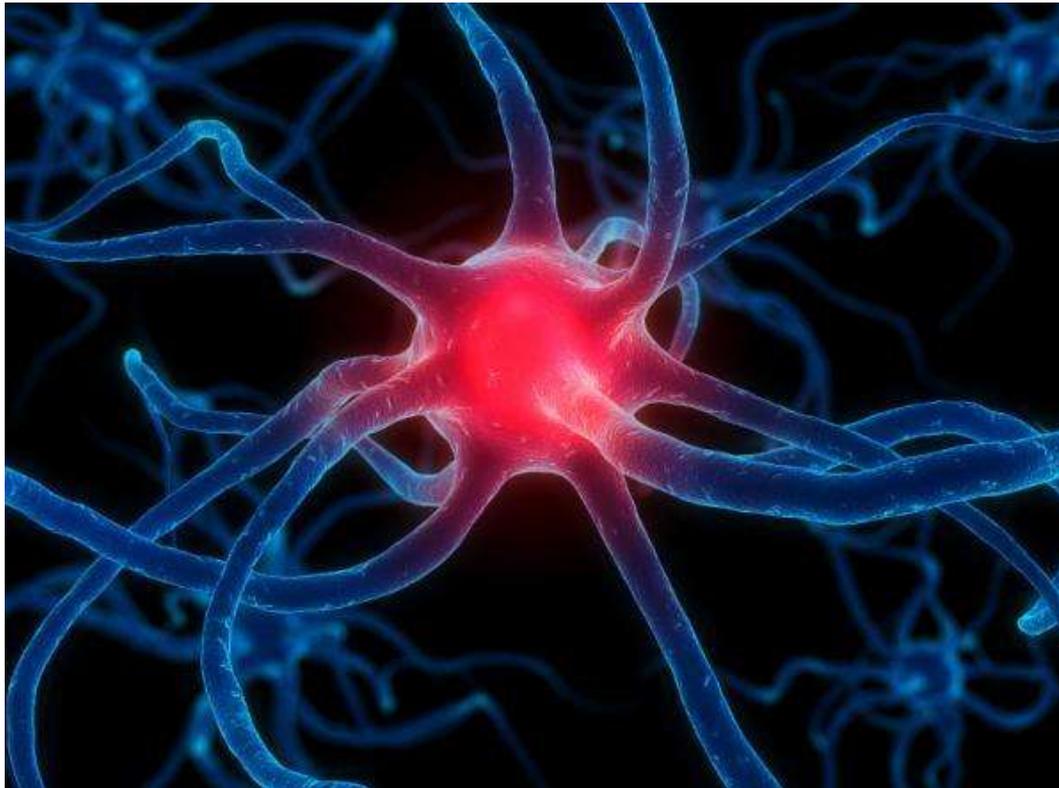
Communication is essential.

- **We need to communicate proactively – otherwise others will fill the void**
- **We need to speak a language everybody understands**
- **We need to show empathy for public concerns and avoid being perceived as arrogant**
- **We need to raise our voice when science is being misused or evidence being ignored**





Welcome to the Age of Biology!



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