Speaker Slides

Richard MacCowan

The New Normal; Nature as the Technology of the Future

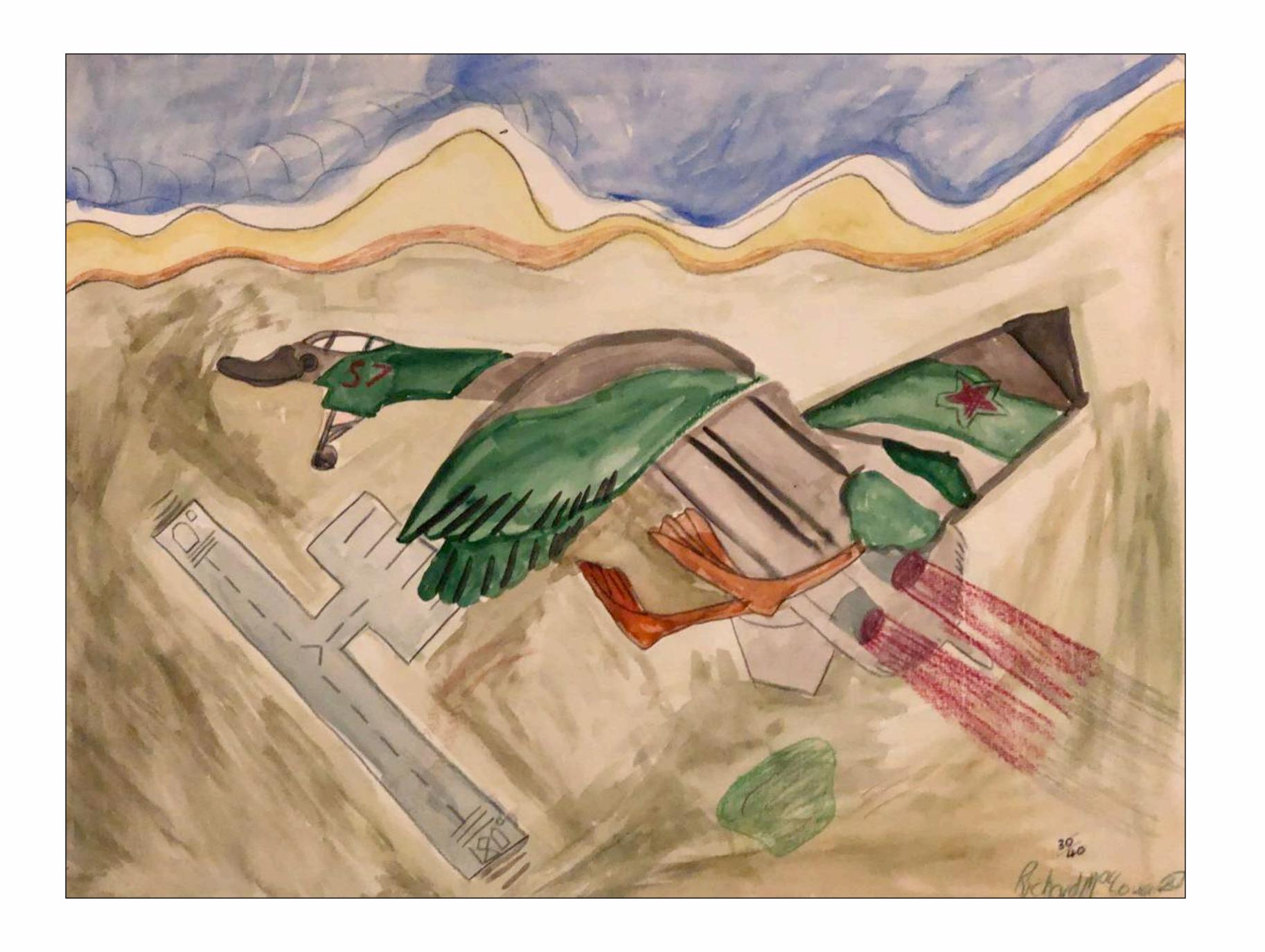


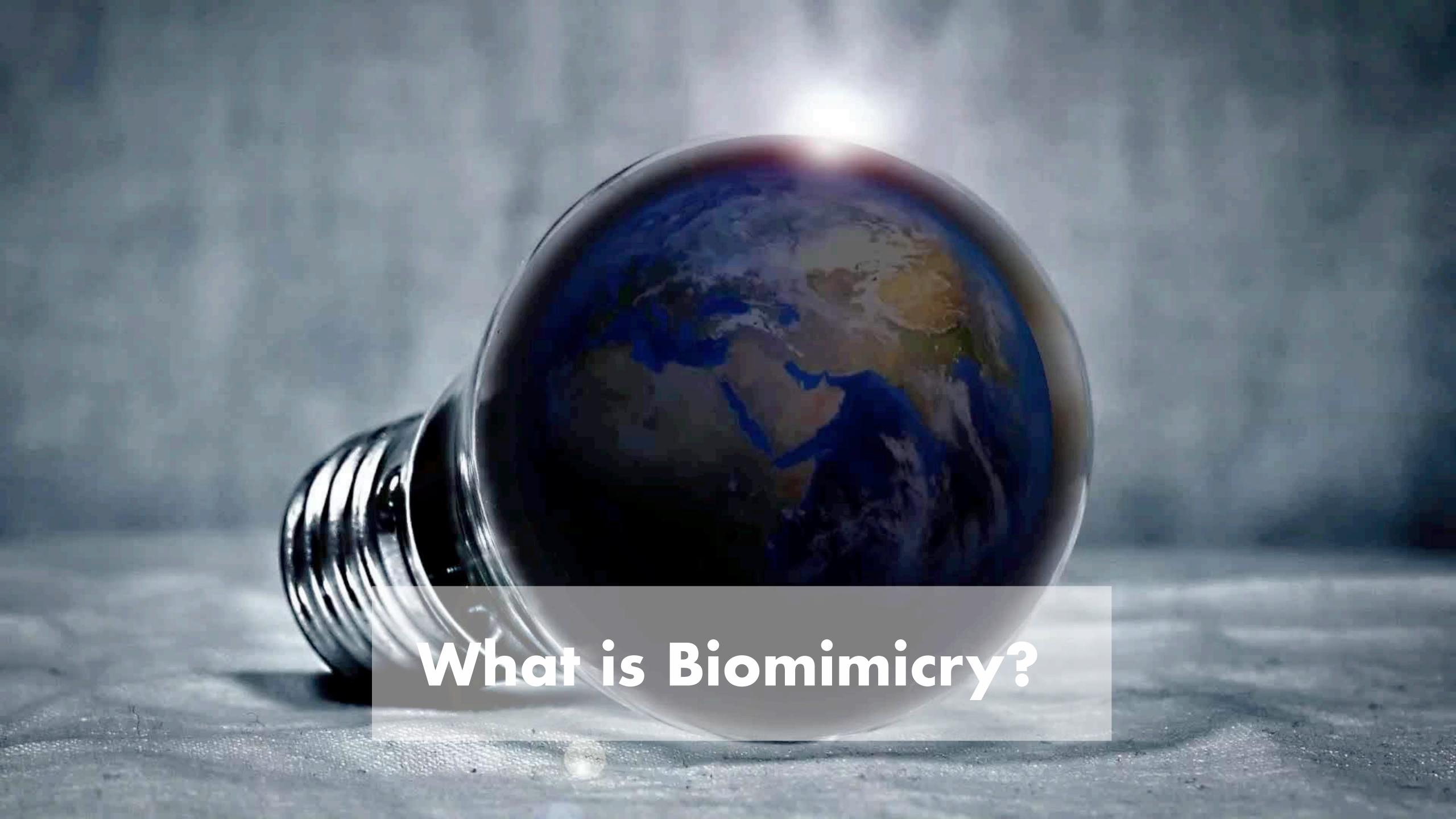












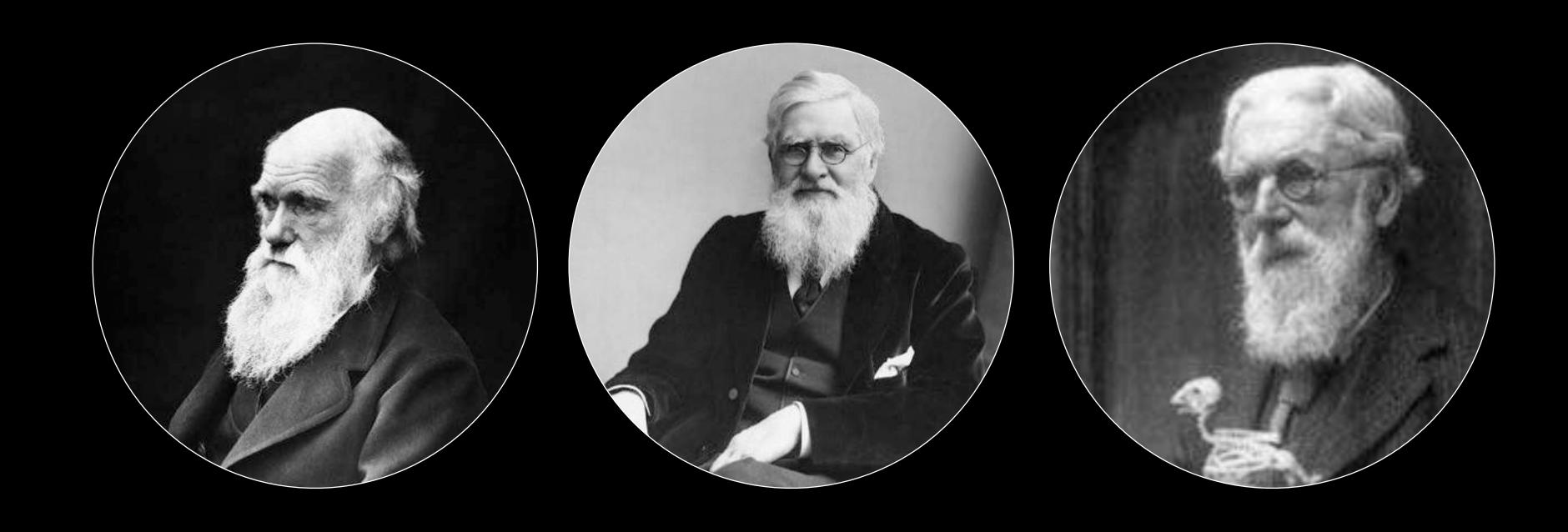


Leonardo da Vinci 1452-1519



Alessandro Volta 1745-1827





Charles Darwin 1809-1882

Alfred Russel Wallace 1823-1913

D'Arcy W. Thompson 1860-1948









Dr. Otto Schmitt 1913-1998

Col. Jack Steele M.D. 1924-2009

Dr. Julian Vincent still rockin'

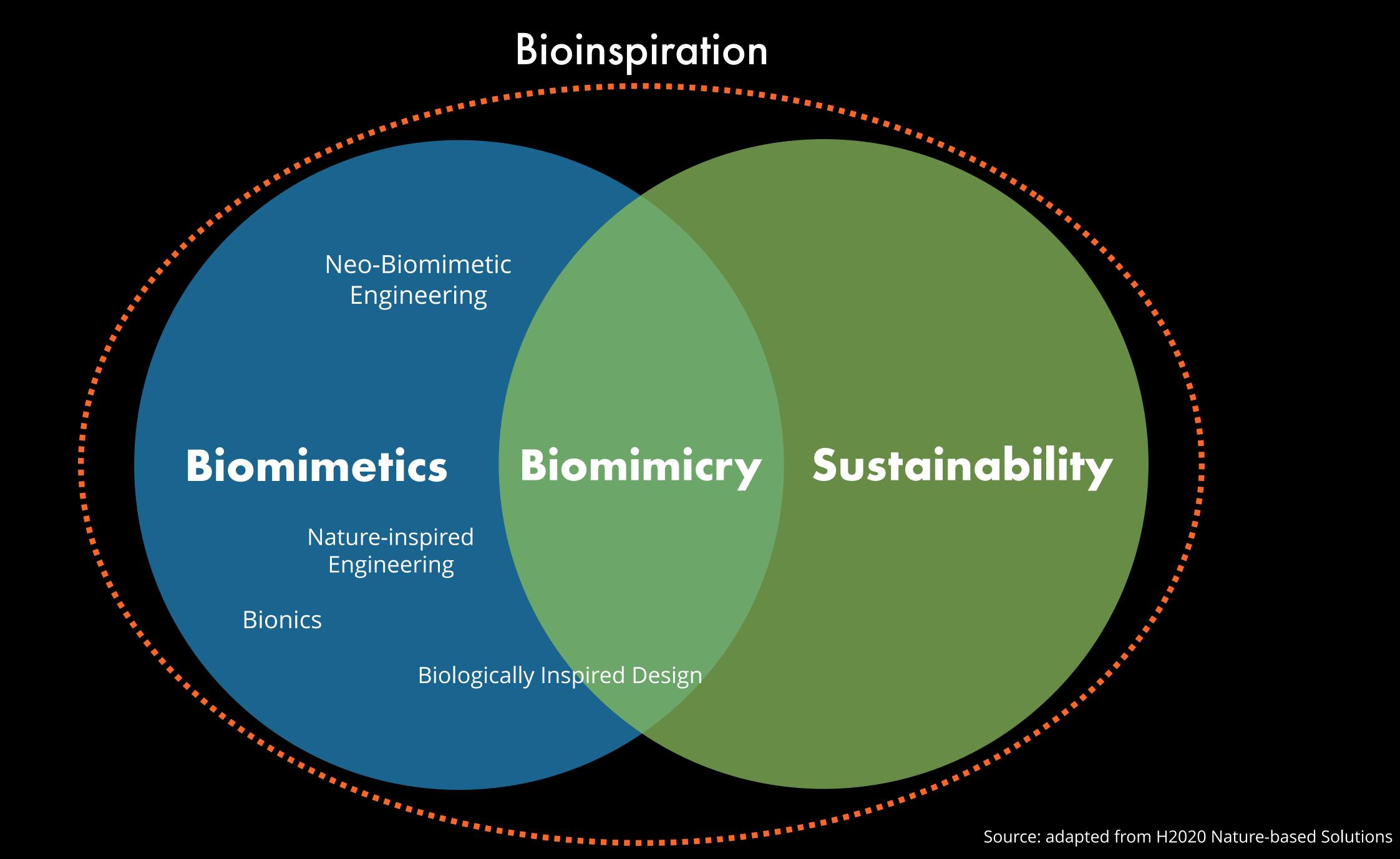
Janine Benyus 1958-present



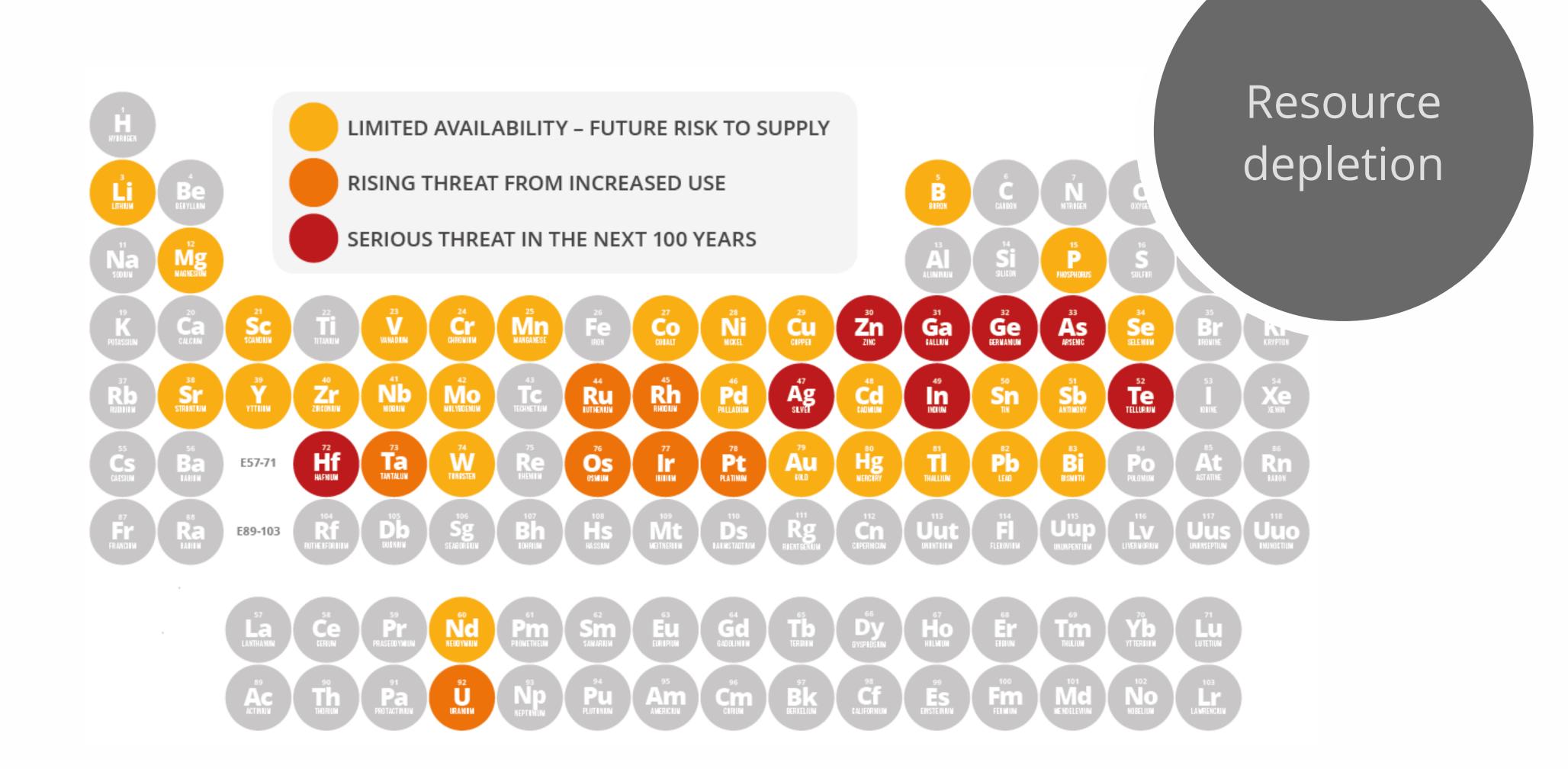








Bioinspiration Neo-Biomimetic Engineering Biomimicry Sustainability Biomimetics Nature-inspired Engineering Bionics Biologically Inspired Design



Technology

Large variety of elements

Exact design

Forming and micro-structuring

Selection of material according to function

Secure Design

Biology

Light elements dominate

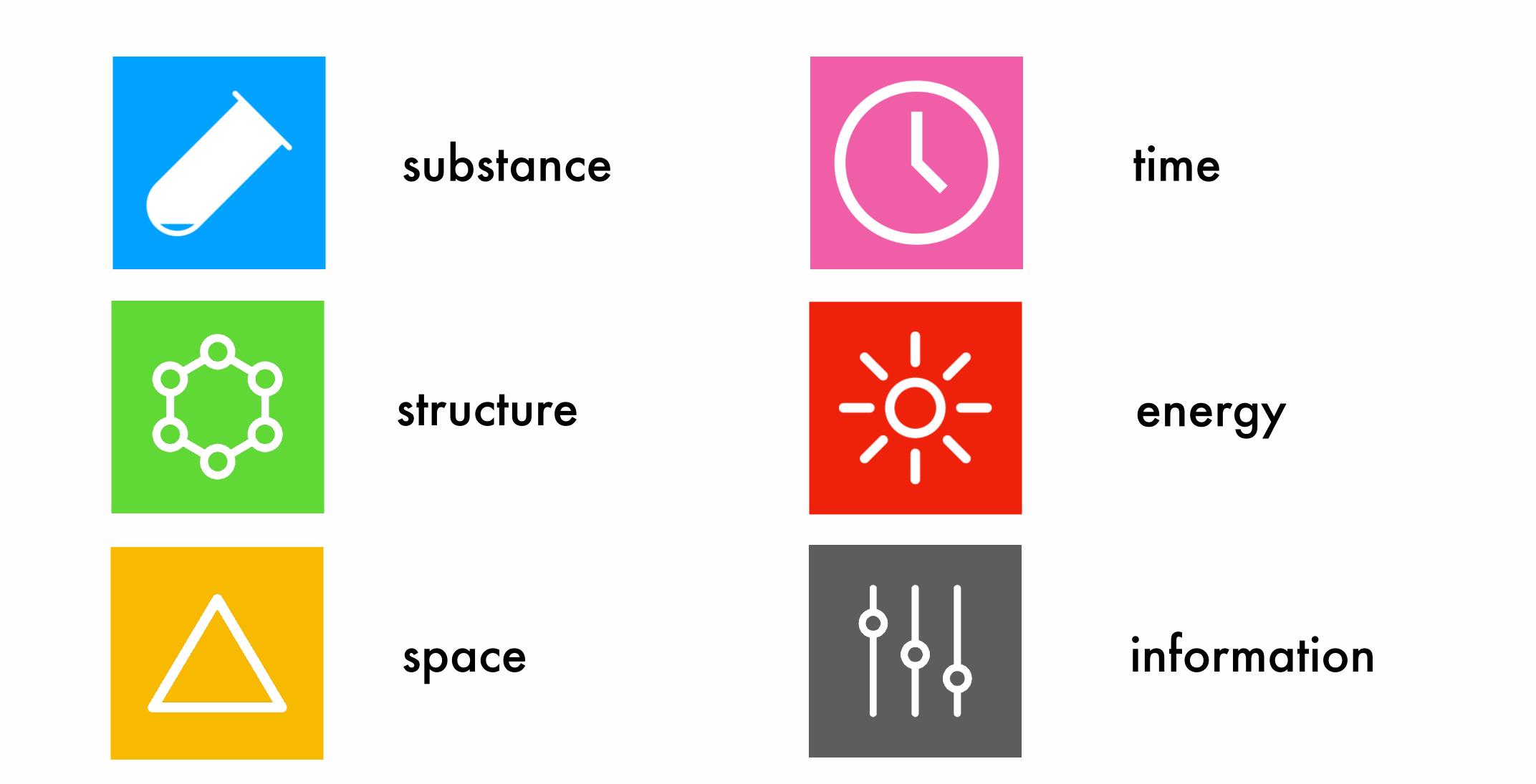
Approximate design

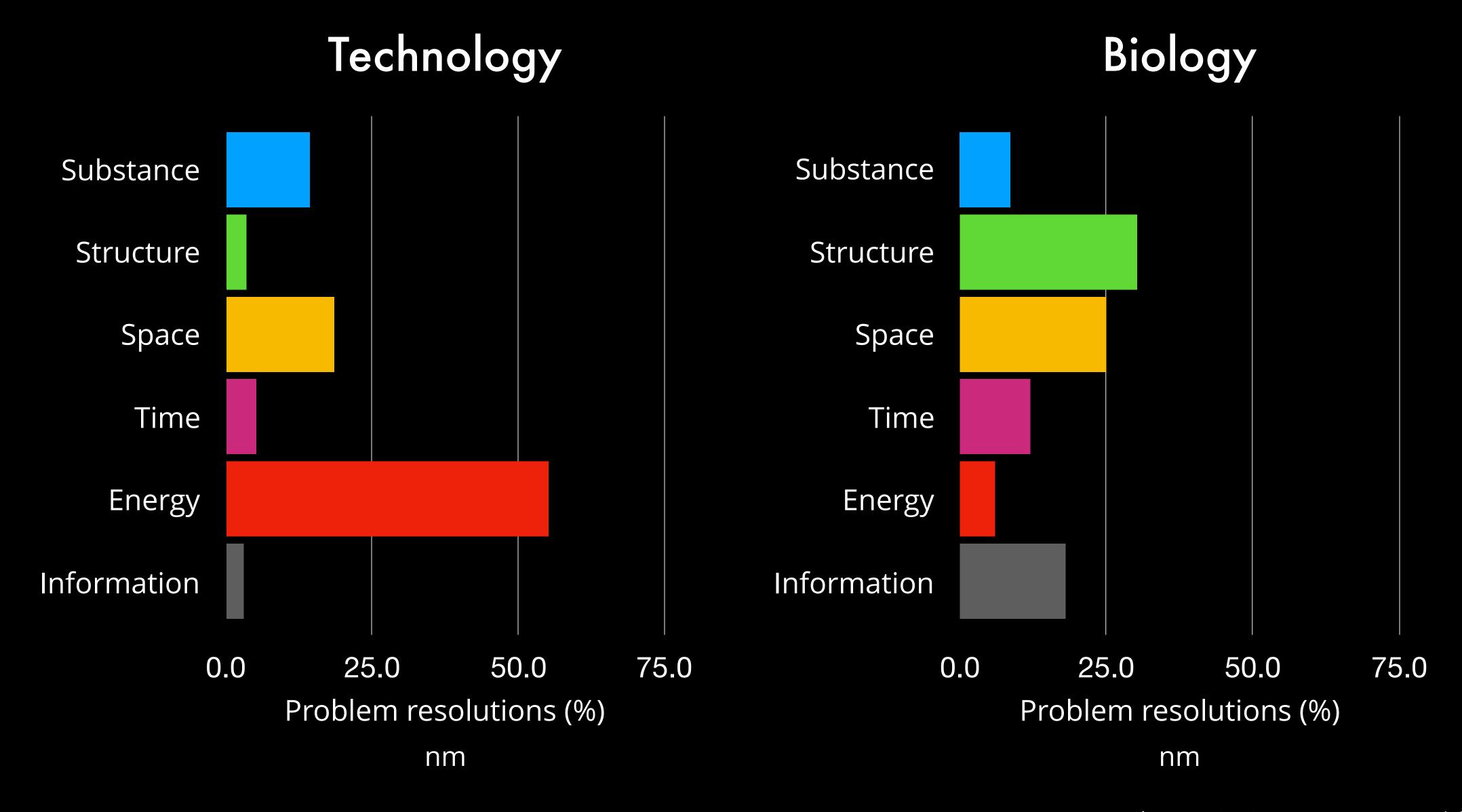
Hierarchal structuring at all size levels

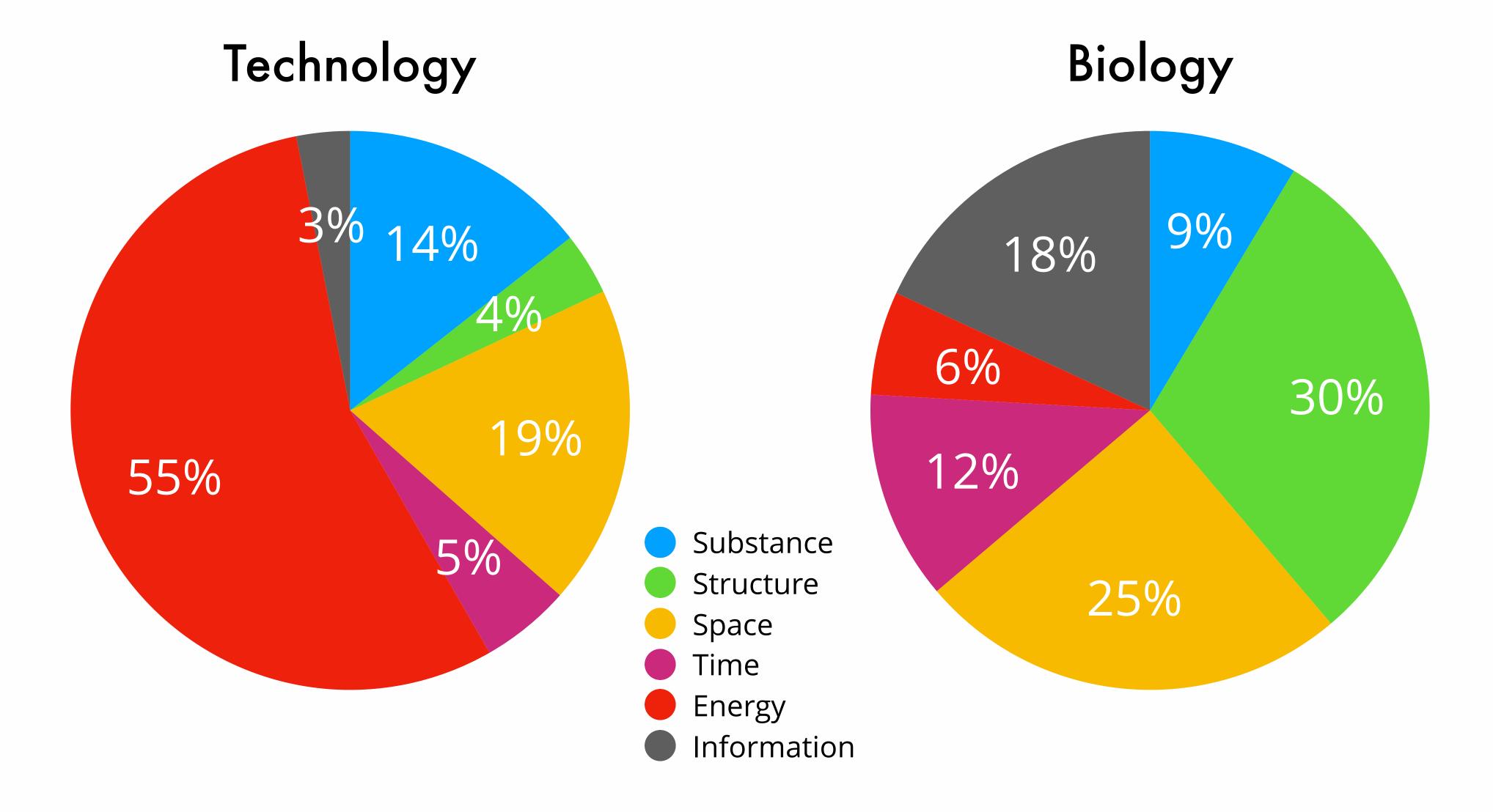
Adaptation of form and structure to the function

Modelling & remodelling to changing environmental conditions

Healing: capability of self-repair





































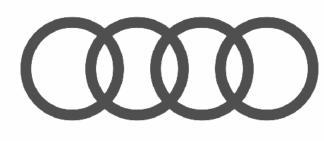




















Logoplaste

TRENDS IN BIOMIMETICS A search of the more than 25,000 papers in biomimicry shows the rising interest in the field over the past decade, but studies are mainly restricted to the physical sciences. 1,200 -----Chemistry - Materials 1,000 Engineering Number of papers Cell and molecular 800 biology 200 2002 2006 2010 2014 1998 Data obtained by searching the Web of Science Core Collection with the onature term "biomim* or bioinspir*".

How do you frame a question?

Industry-led (top-down)









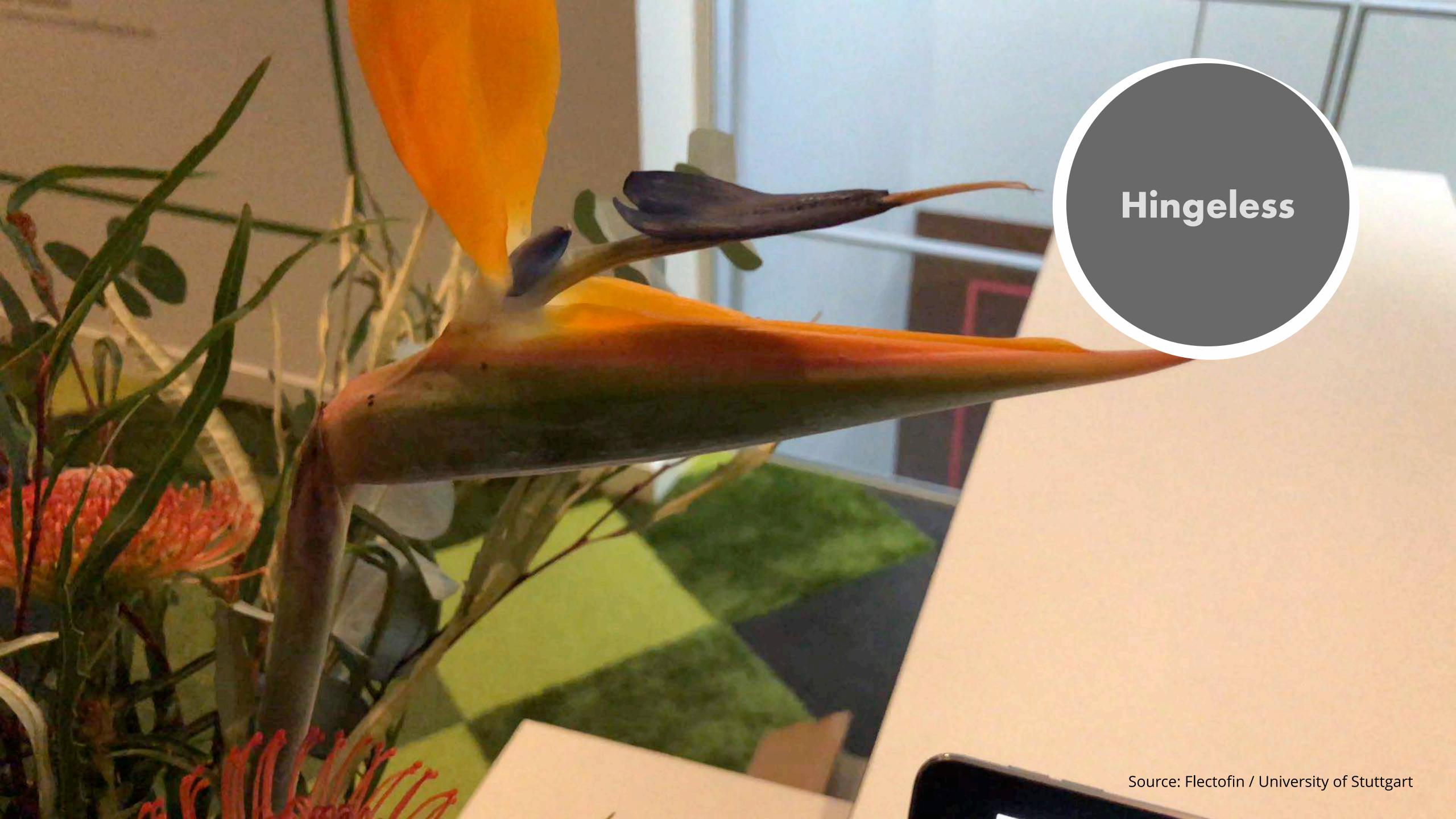


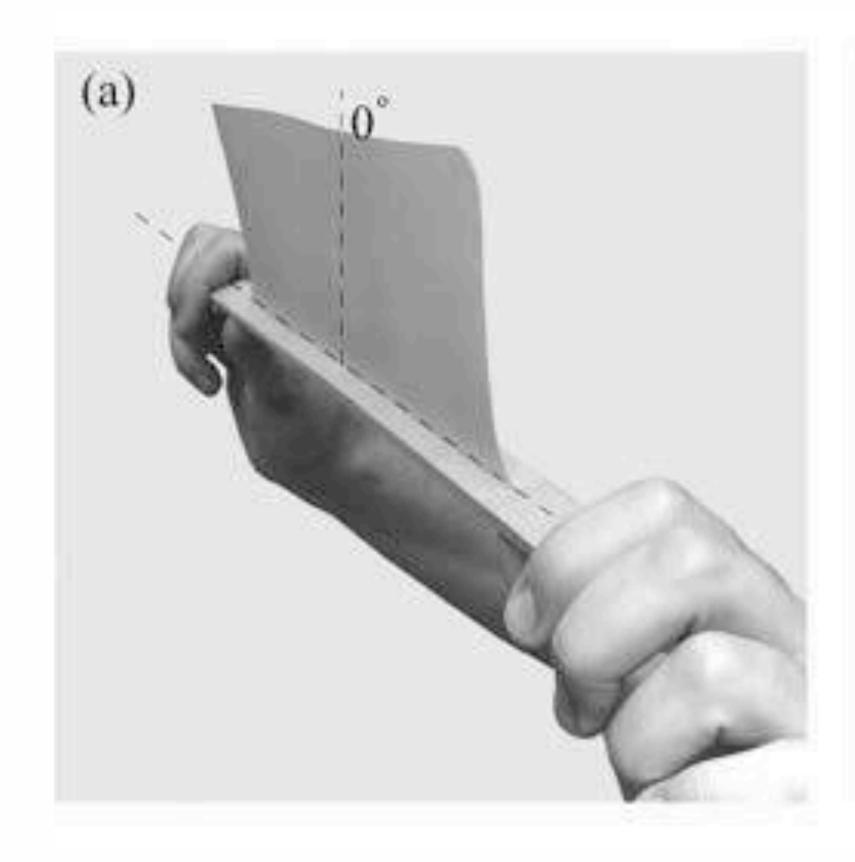


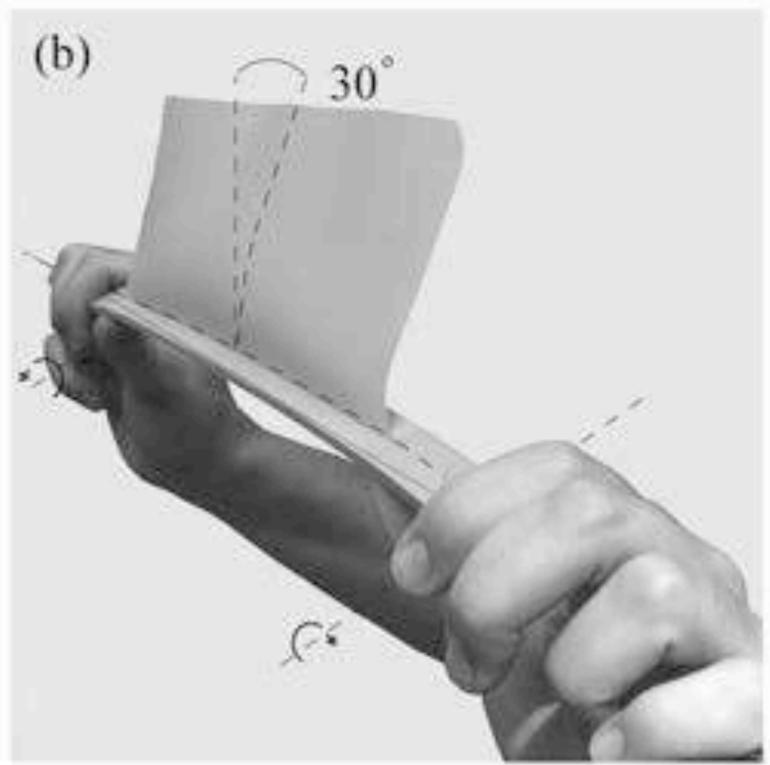


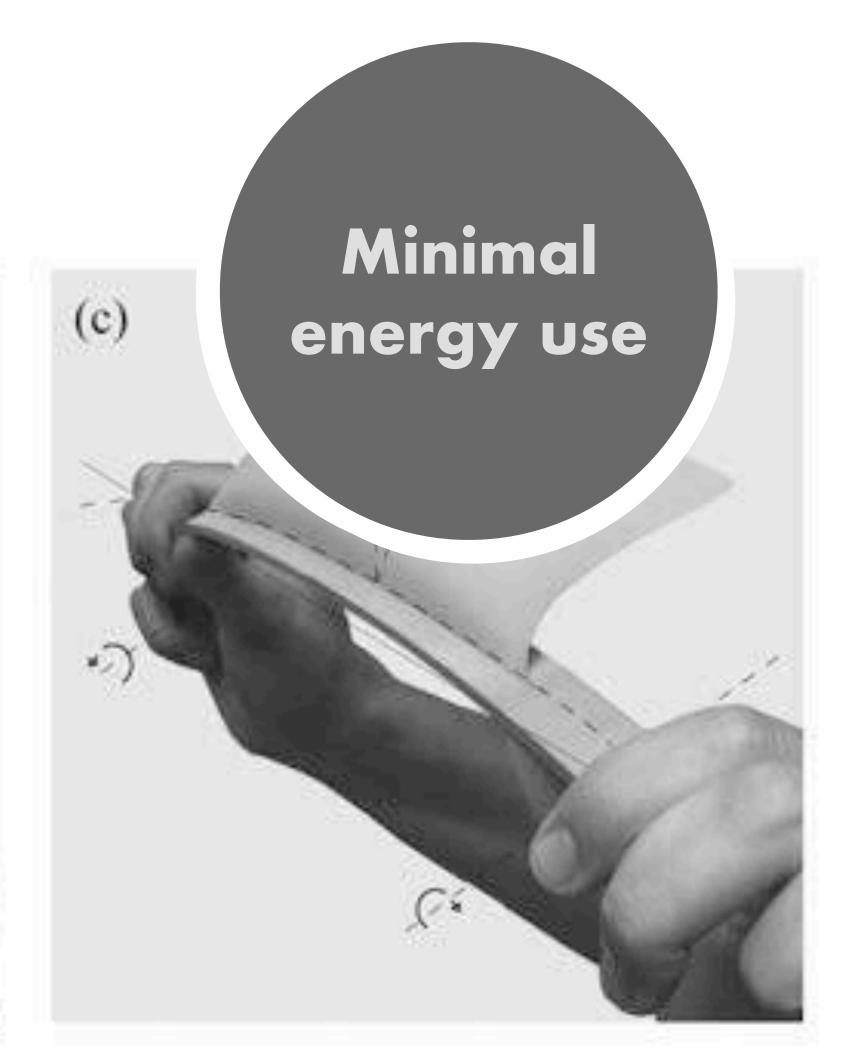


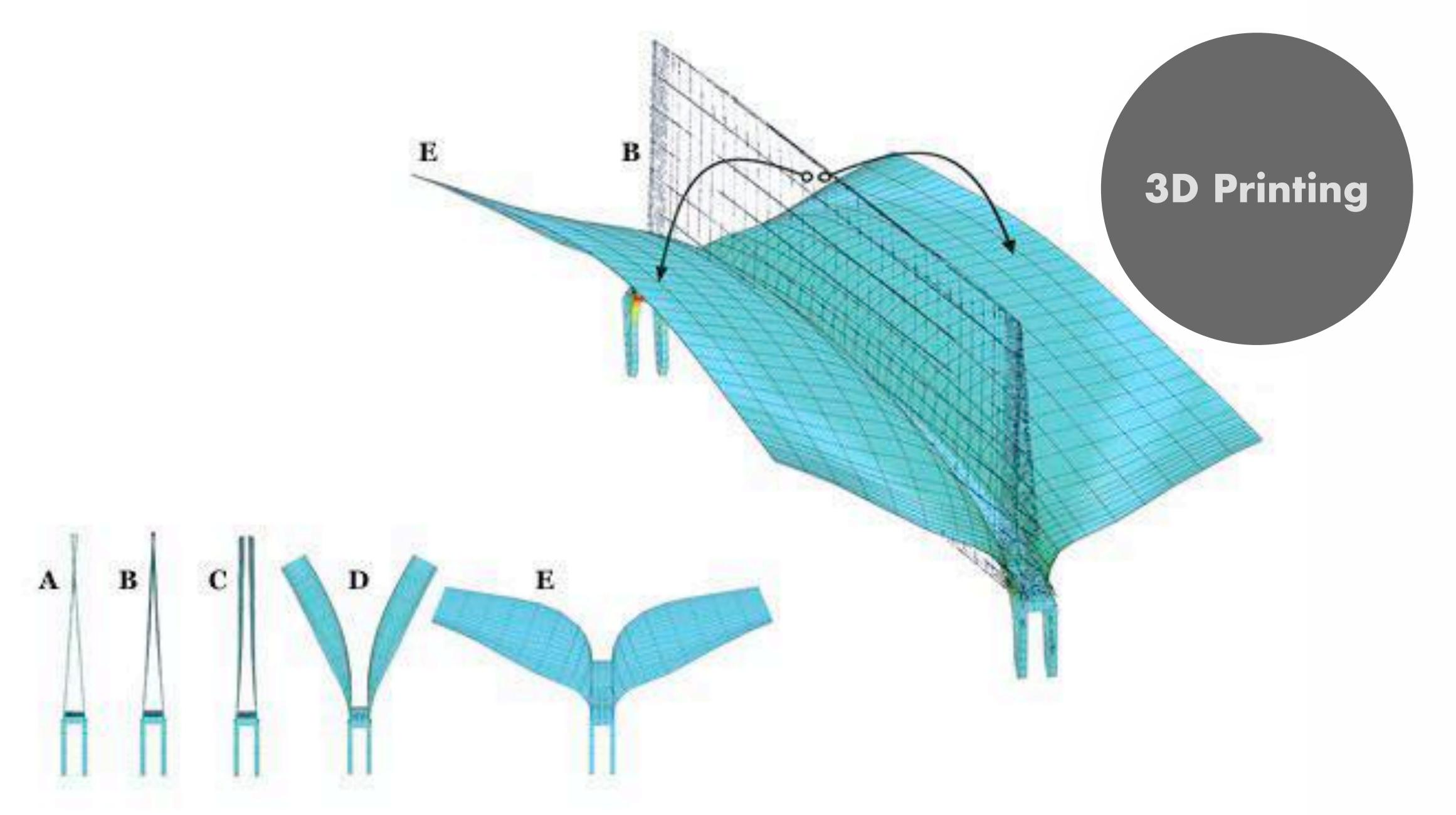










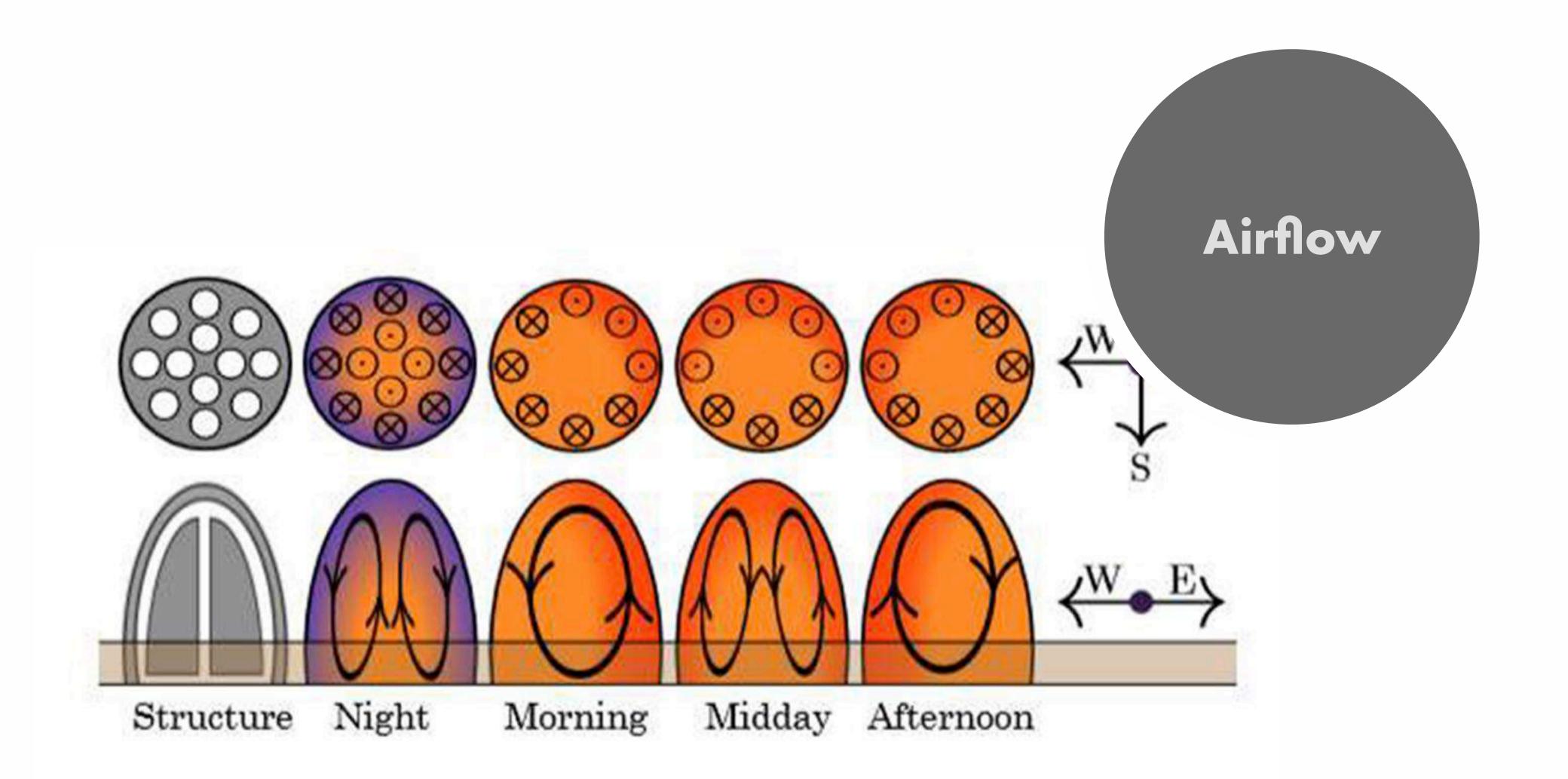




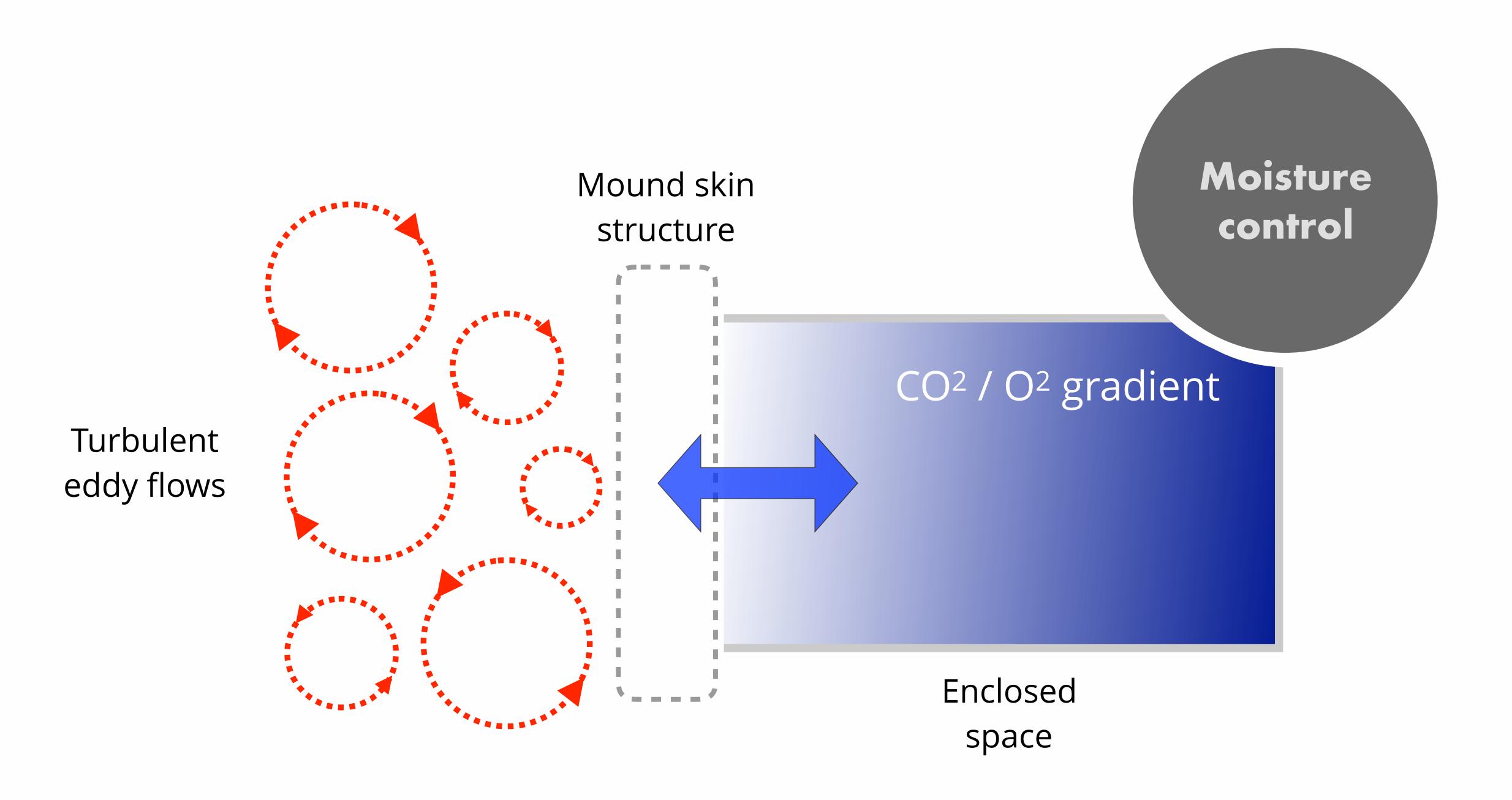










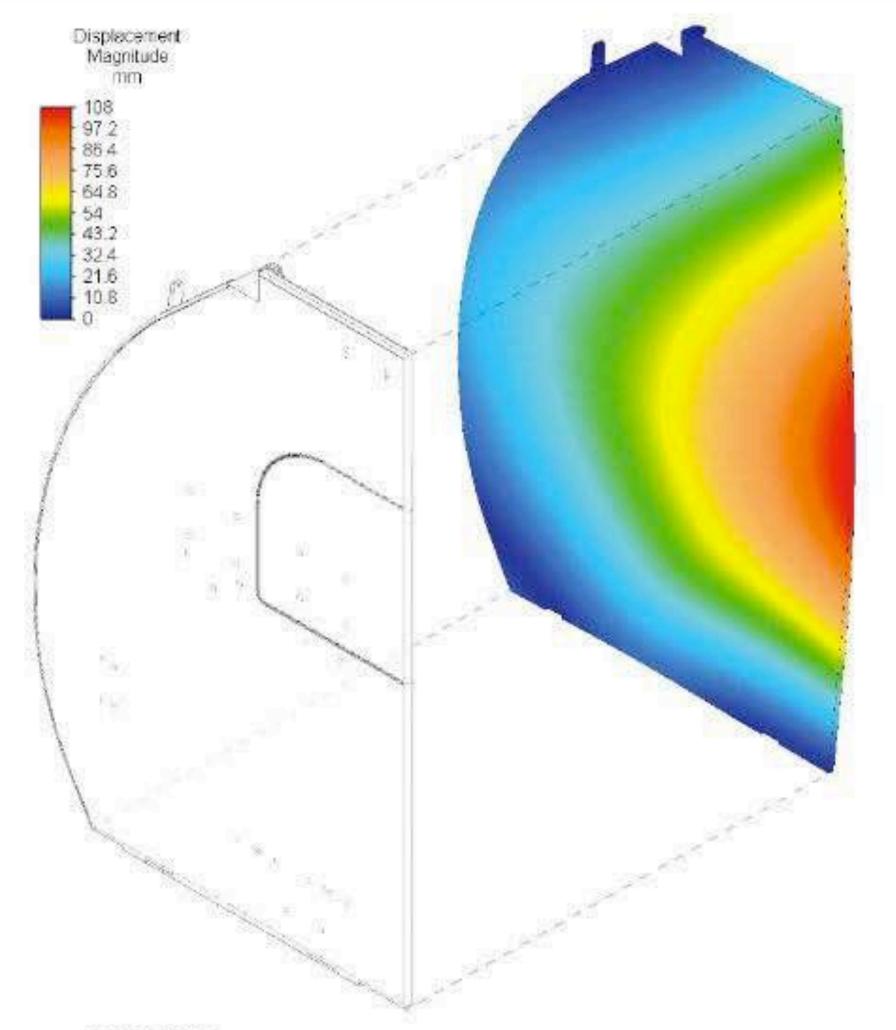




Fungus inspired moisture brick







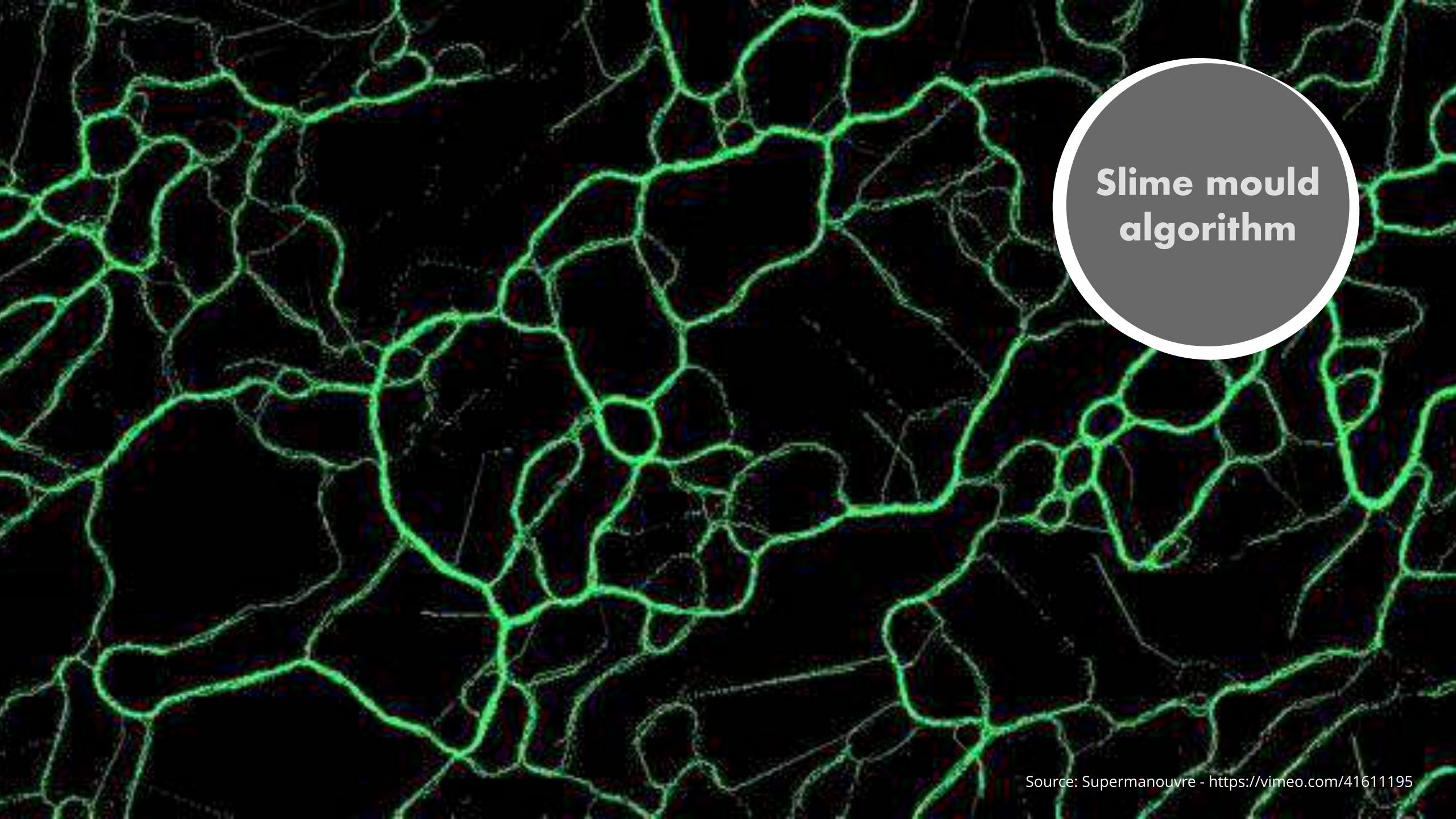
Original weight 65 kg

EXISTING STATE-OF-THE-ART PARTITION

Weight: 65 kg

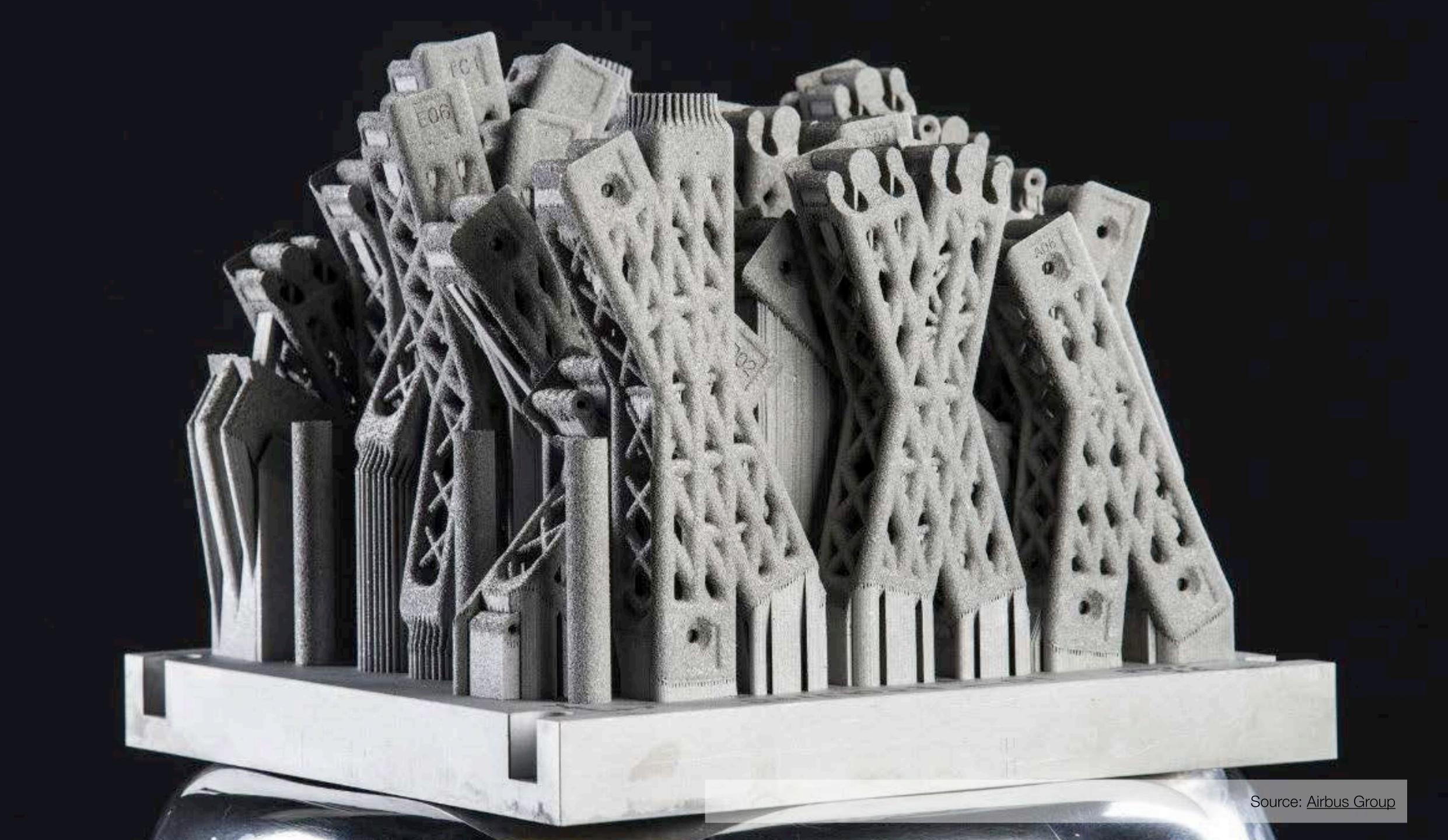
Displacement: 108 mm Load: 9G Forward

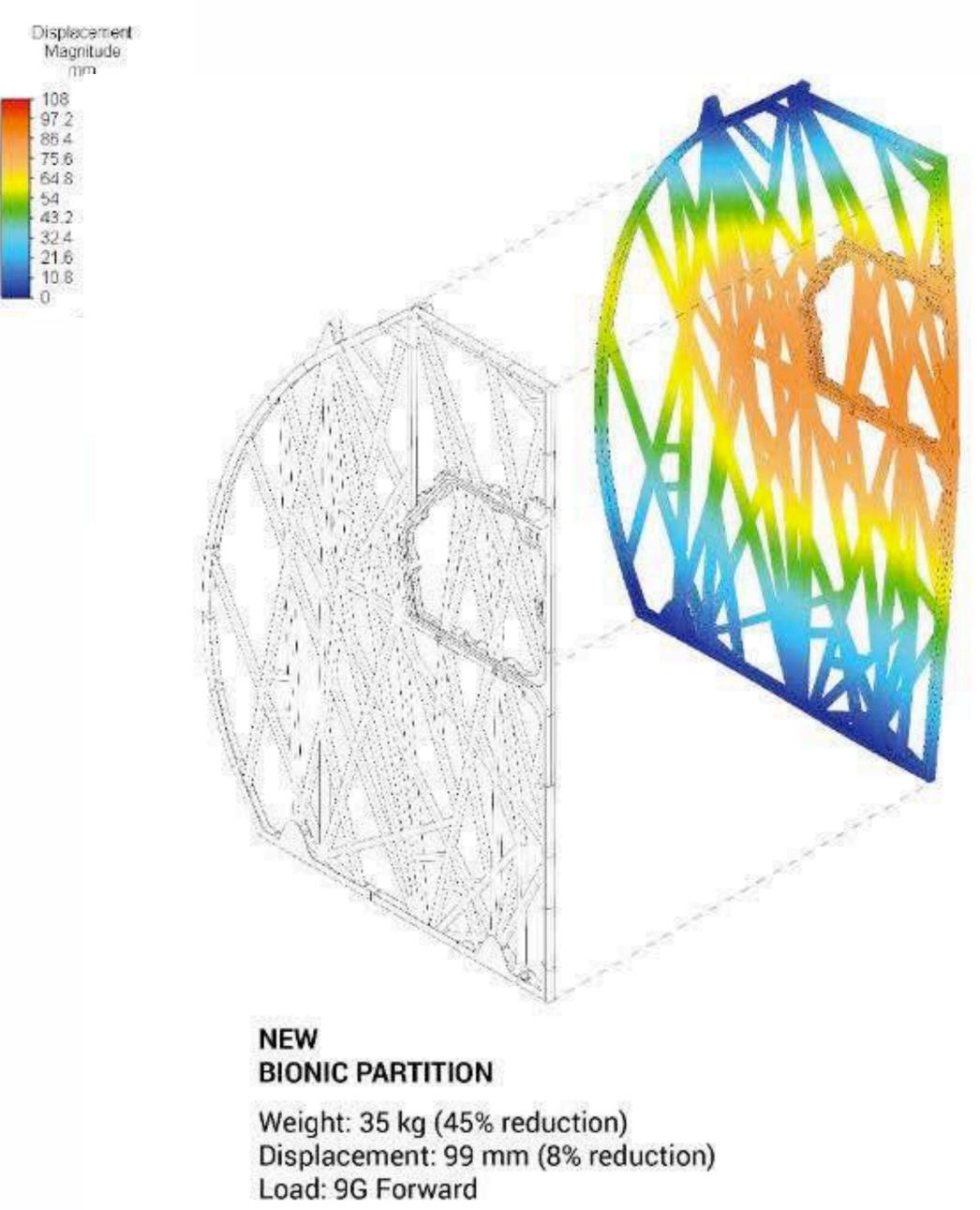


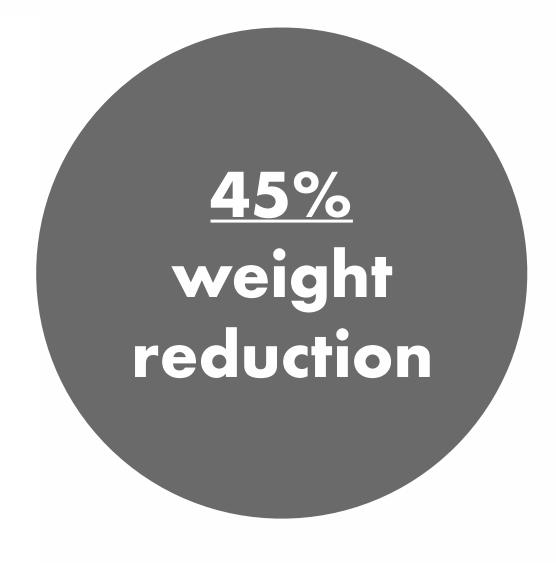


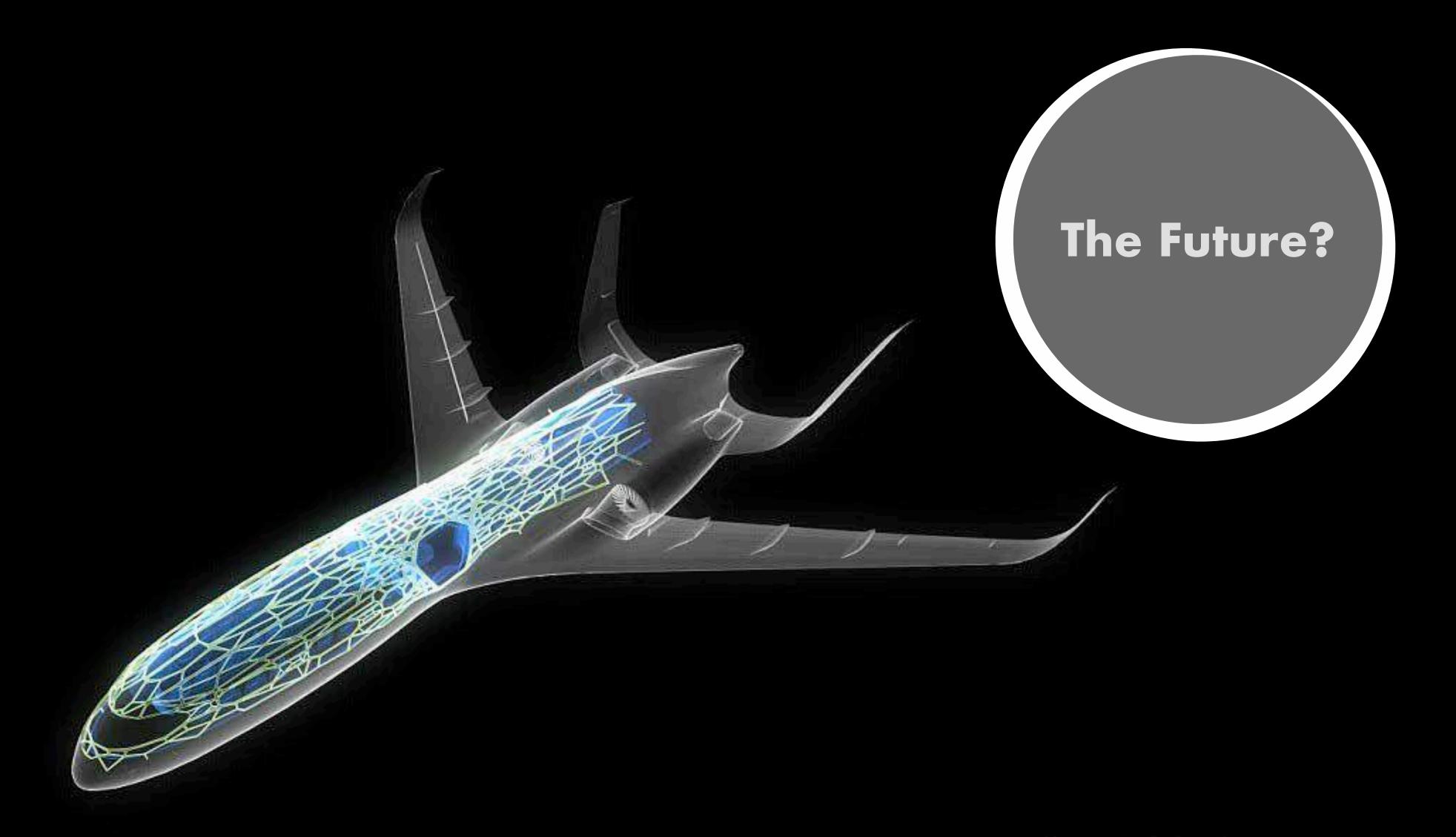
Partition optimization via generative design High stress Low stress Weight

High-performing results based on goals







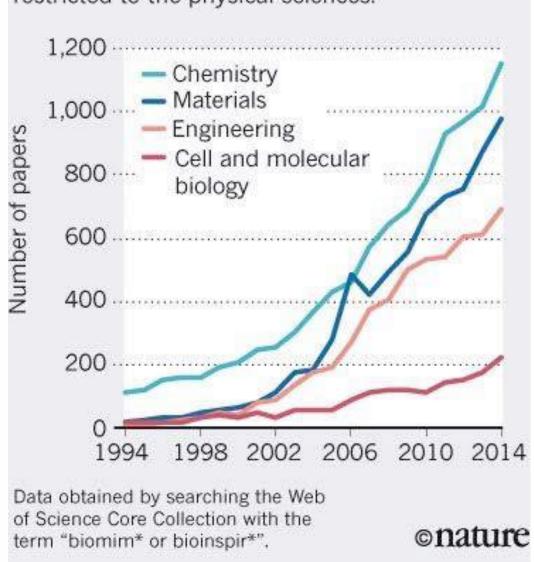


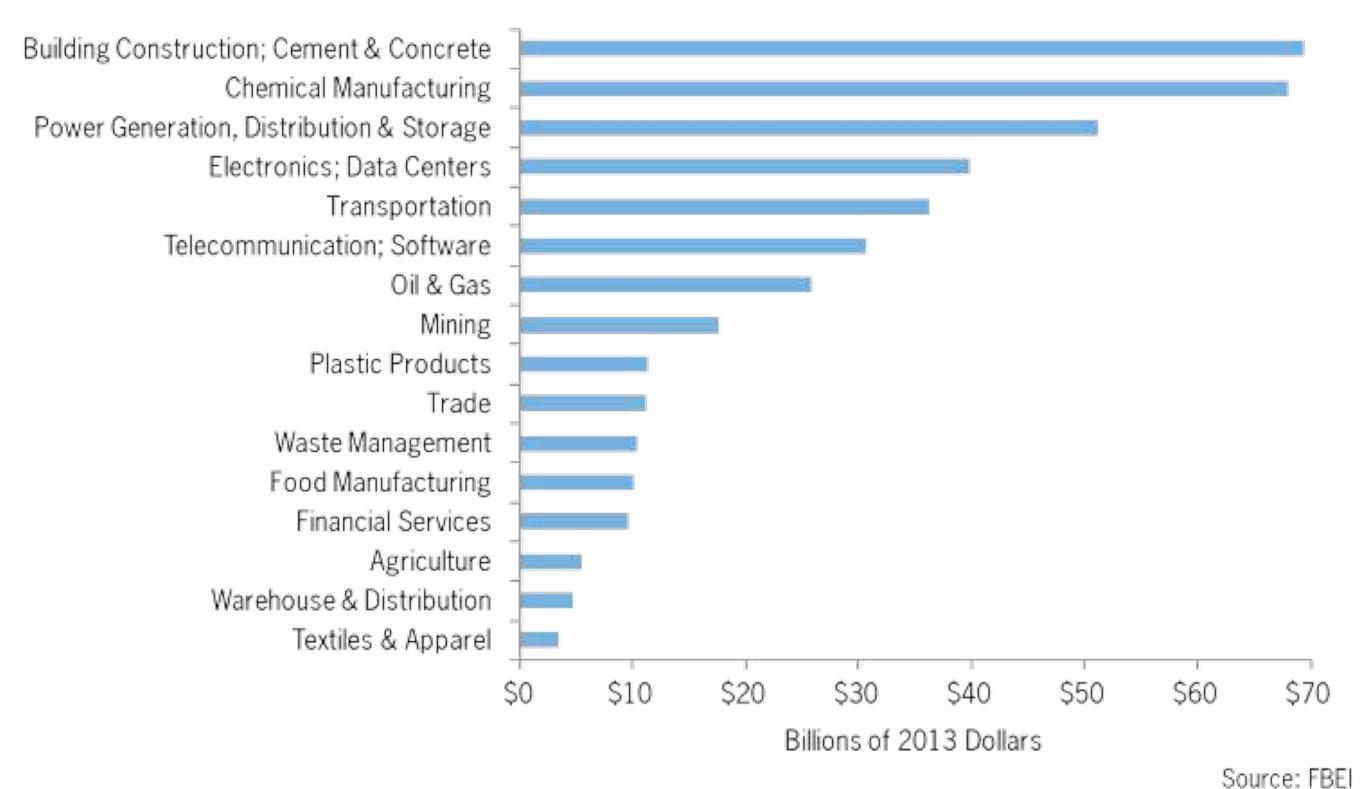
@ AIRBUS S.A.S

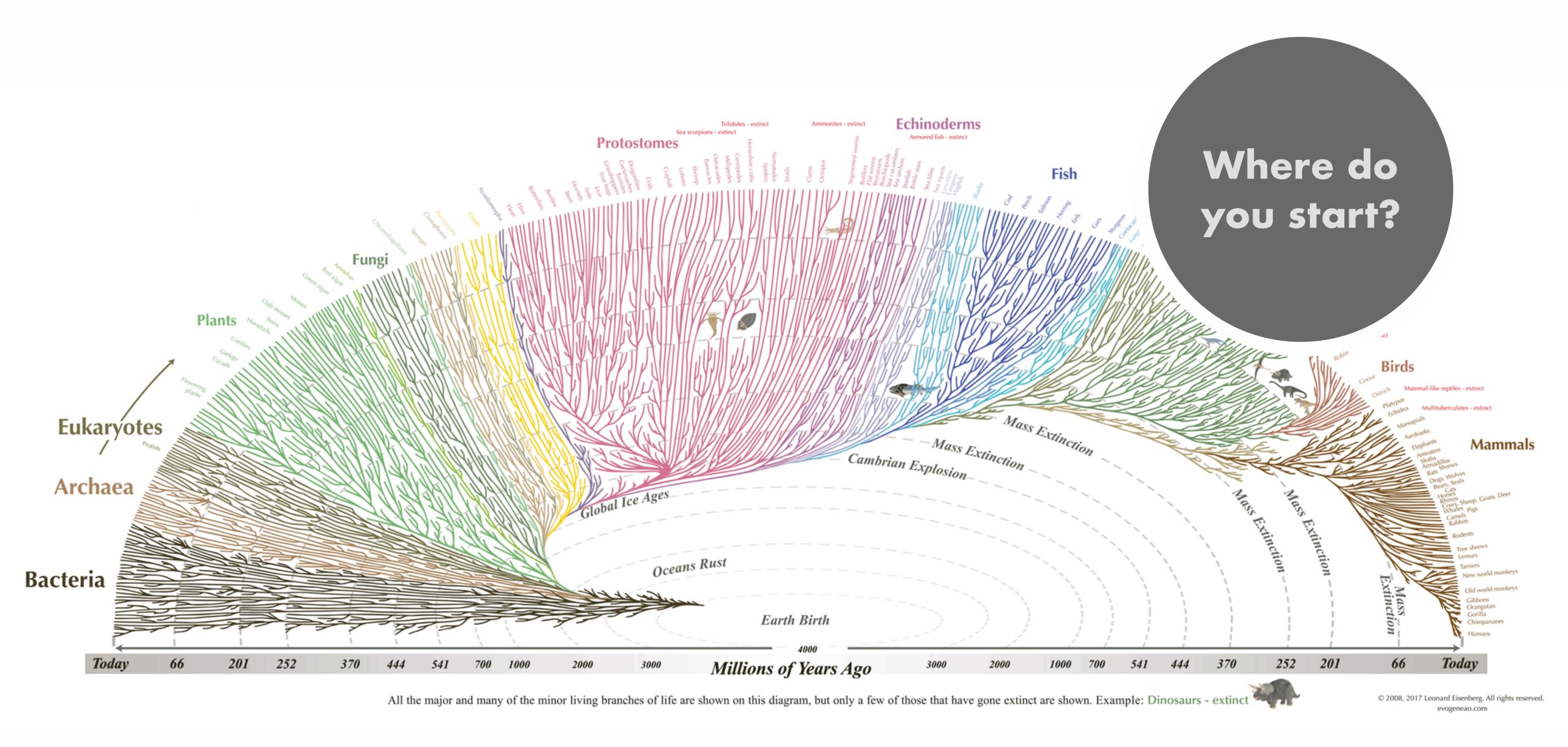


TRENDS IN BIOMIMETICS

A search of the more than 25,000 papers in biomimicry shows the rising interest in the field over the past decade, but studies are mainly restricted to the physical sciences.









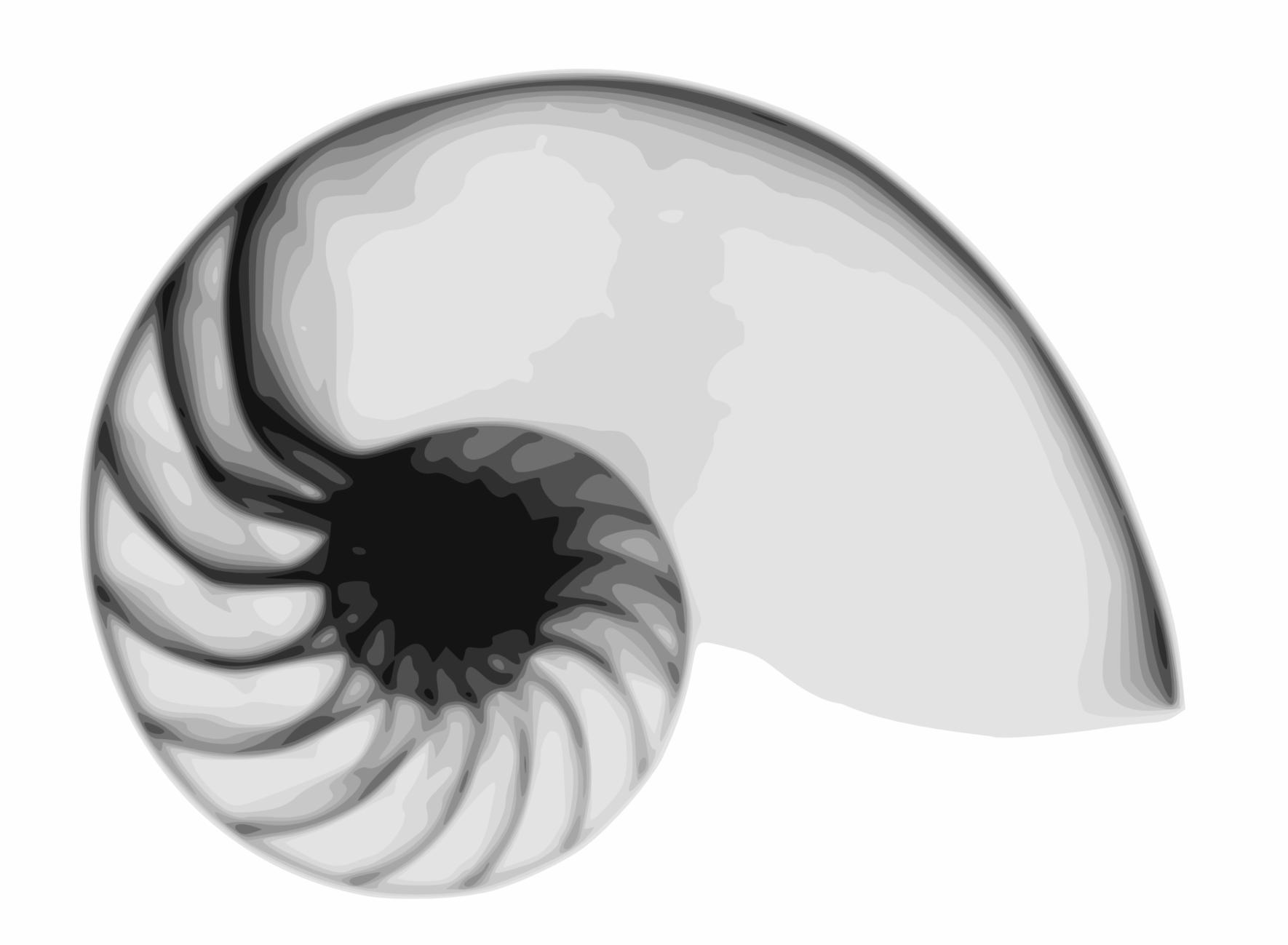




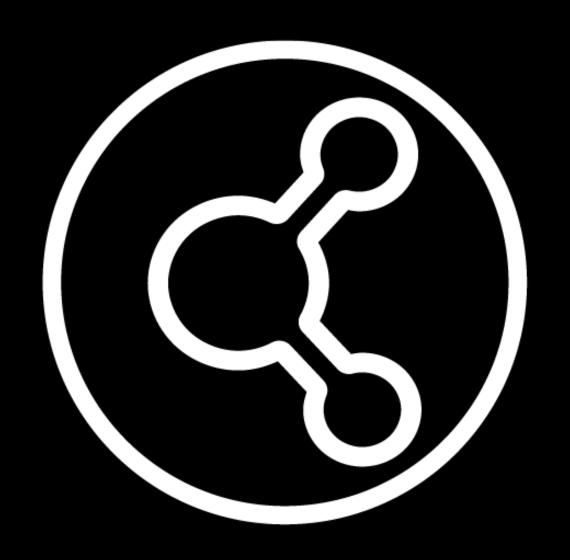
It's proving a game changer for many industries

An additional problem-solving toolkit

Poll Results



Thank you!



Richard James MacCowan Founder

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