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Tekstilno-tehnološki fakultet  
Zavod za materijale, vlakna i ispitivanje tekstila

# **Tekstilna vlakna za putovanje u budućnost**



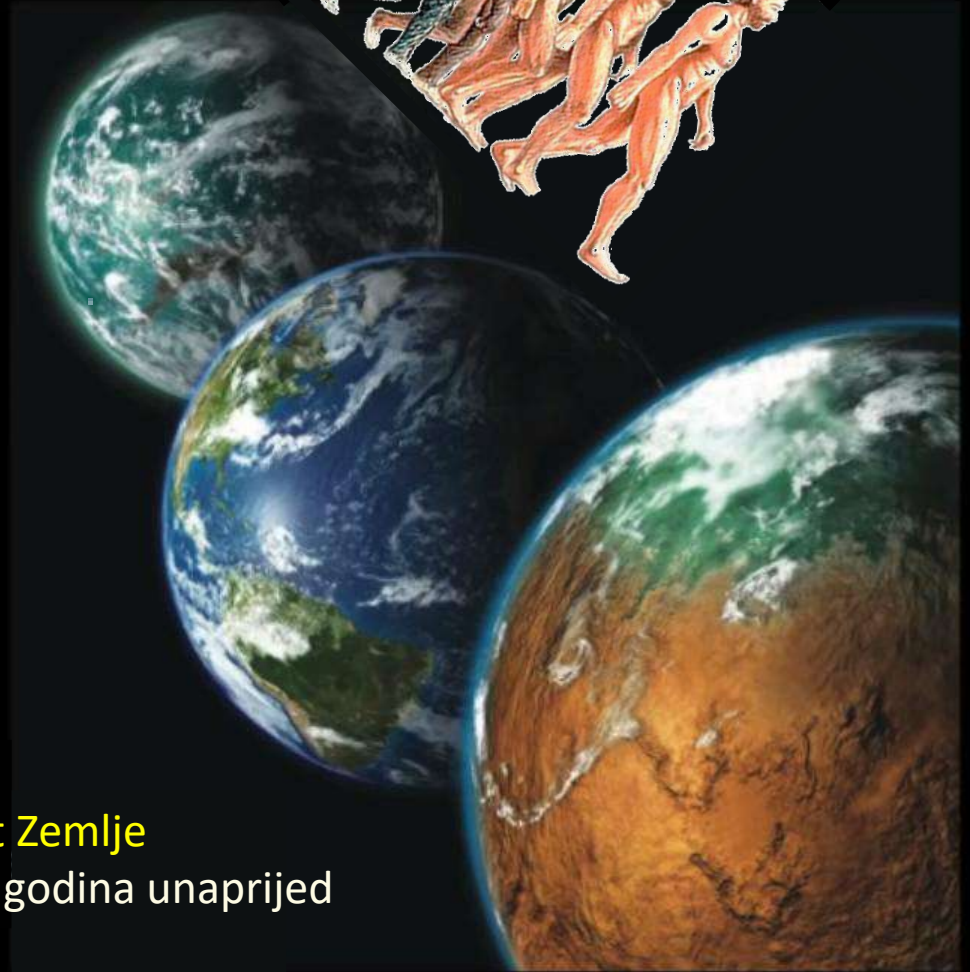
prošlost Zemlje  
3 000.000 godina unatrag

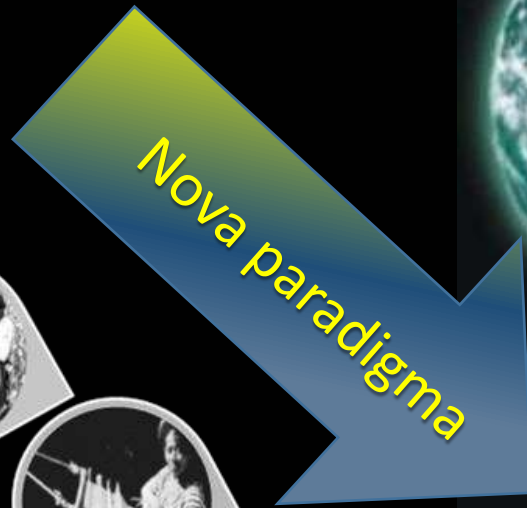


sadašnjost Zemlje



budućnost Zemlje  
3 000.000 godina unaprijed









Uzmi iz prirode

➤ prirodna vlakna



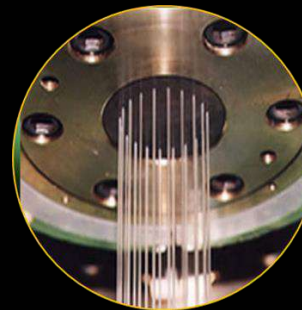
Kopiraj prirodu

➤ 1. generacija umjetnih vlakana



*“Priroda kao model, mjera i mentor”.*

➤ 2. generacija umjetnih vlakana



➤ 3. generacija umjetnih vlakana



➤ 4. generacija umjetnih vlakana





<https://www.earth.com/news/moon-dust-toxic-health/>

Zemlja

➤ 4. generacija umjetnih vlakana – **HP vlakna**  
(vlakna visokih performansi)

svemir

budućnost



<https://www.information-age.com/firefighter-role-soil-dominates-it-cis/dv-123461346/>



<https://www.soundingsouthie.com/features/surviving-in-cold-water>

**VLAKNIMA OJAČANI KOMPOZITI**



= HP vlakna +

- ✓ metalna
- ✓ keramička
- ✓ polimerna  
matrica

## VLAKNIMA OJAČANI KOMPOZITI







budućnost

**21. stoljeće**







# 21. stoljeće

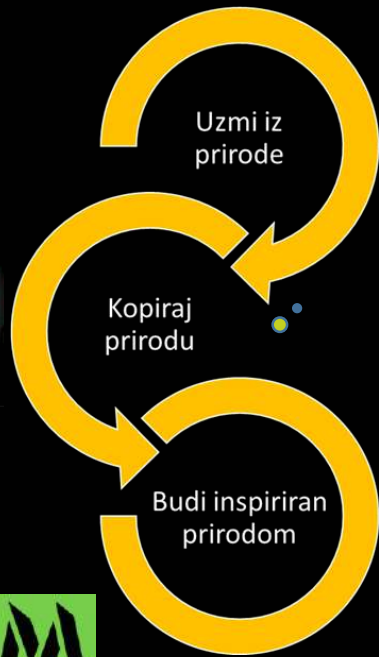
pametna vlakna  
(vlakna 5. generacije)

biorazgradiva  
vlakna

prirodna vlakna

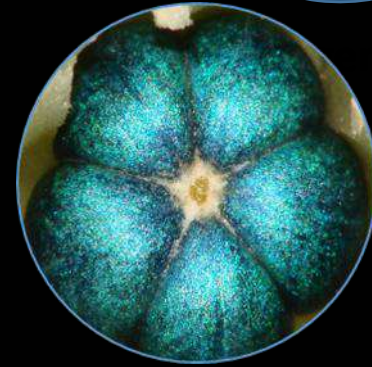
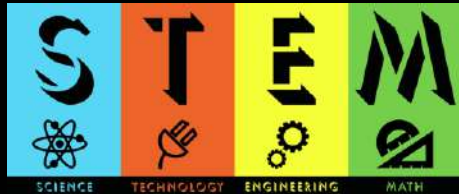
vlakna iz novih  
izvora





## 21. stoljeće

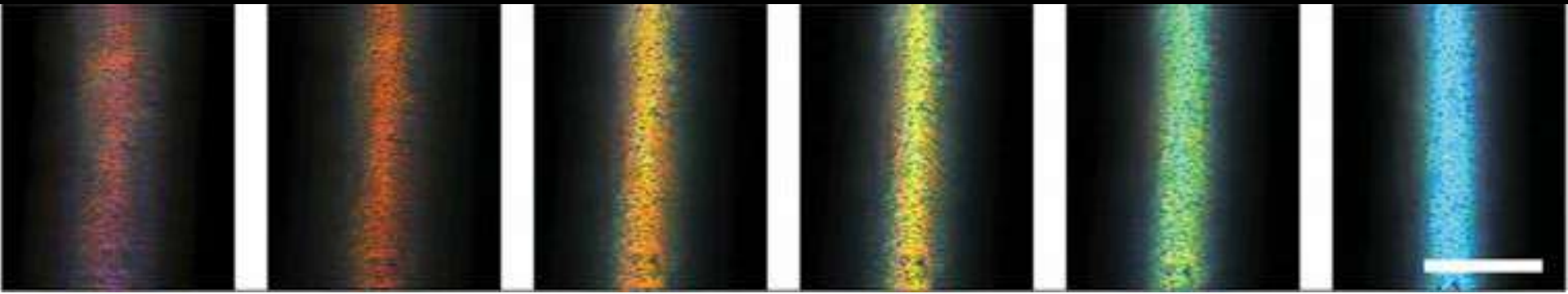
<https://lakerschools.org/2019/01/28/lakers-receives-135k-stem-grant/stem-logo-1/>



*lat. Margaritaria nobilis*

pametna vlakna  
Kameleon vlakna

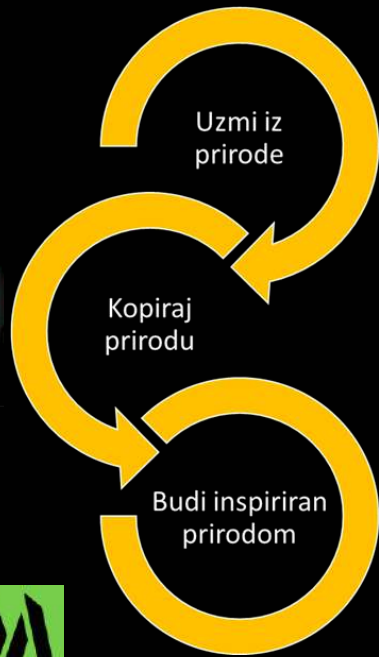
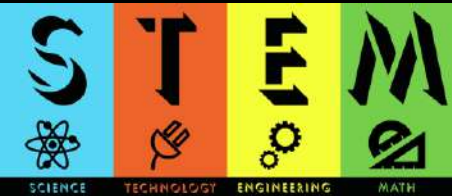
Porast naprežanja







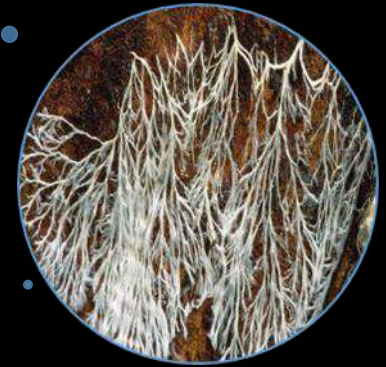
# 21. stoljeće



Mycelij  
gljiva



Mylo™

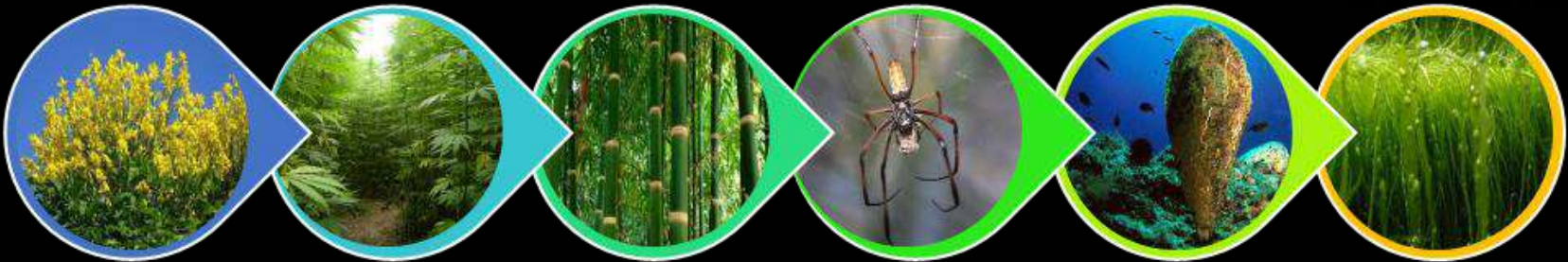




## 21. stoljeće

Povratak u prošlost

### ➤ Povratak prirodnih vlakna

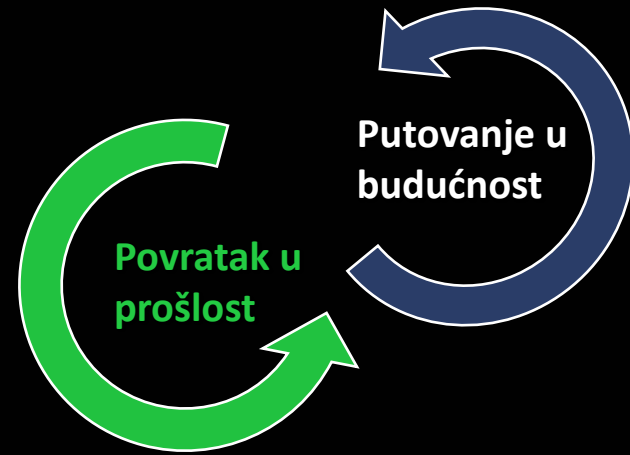


✓ biokompoziti



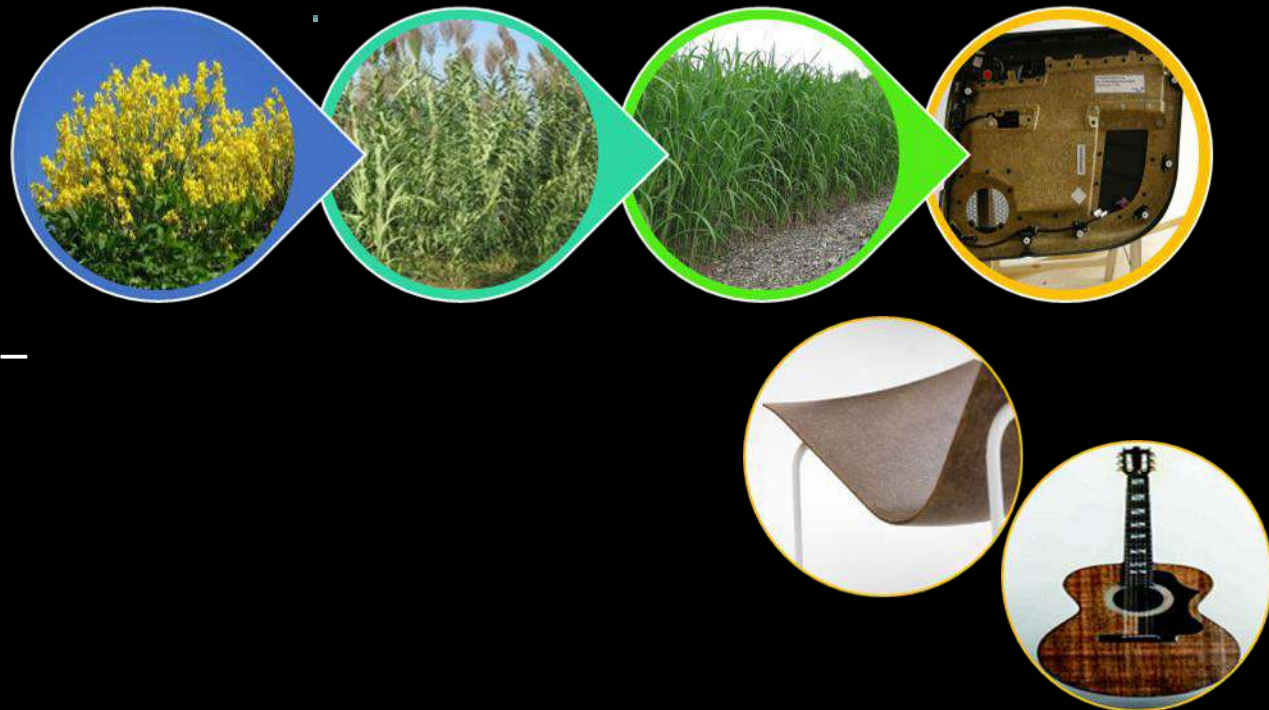


# 21. stoljeće



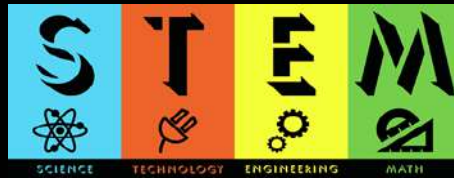
## biokompoziti

K.K.01.1.1.04.0091 projekt  
"Dizajn naprednih  
biokompozita  
iz energetske održivih izvora –  
BIOKOMPOZITI"

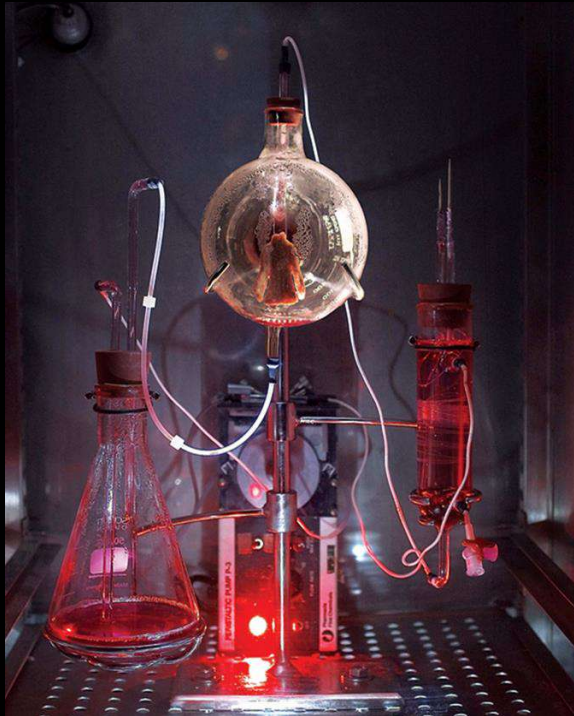




# 21. stoljeće

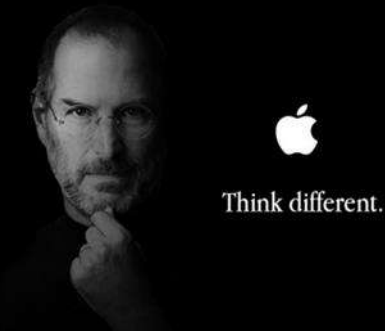
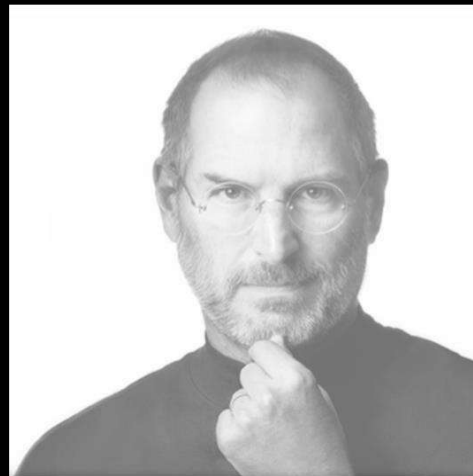


Putovanje u  
budućnost



TEHNOLOGIJA & BIOLOGIJA:

*„ The biggest innovation of the  
21<sup>st</sup> century will be the  
intersection of biology and  
technology”*



Apple  
Think different.





## Politecnico di Milano University





<https://www.thelocal.de/20110930/37921>







➤ Tekstil iz recikliranih PET boca



➤ Tekstil iz bio-otpada

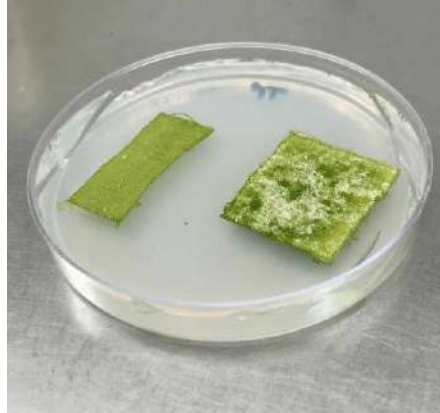


<https://www.itvscience.com/a-dress-made-from-beer/>





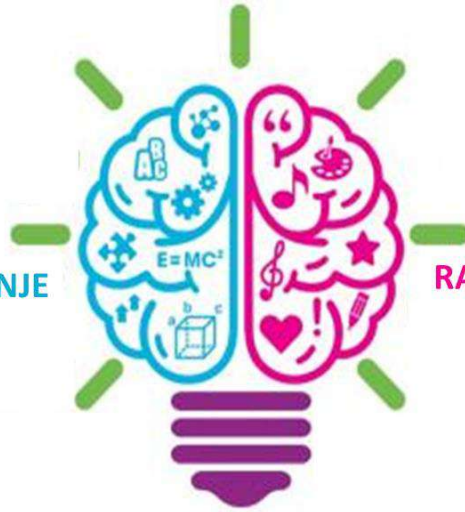
➤ Živa odjeća  
„Biogarment“



AMPEL Lab & Botany Lab The University of British Columbia



INŽENJERSKO  
DJELOVANJE



KREATIVNO  
RAZMIŠLJANJE



<https://sites.google.com/a/friscoisd.org/elliott-stem-fair/engineering>

