Radiocaesium

- Release
- Solubility
- Accumulation → health risk



- Removal from waste water
  - Current methods: impractical

Adsorption of Cs-134 on different types of activated carbon

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KNOWLEDGE IN ACTION

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- Radiocaesium
- Activated carbon
- Experimental set-up
- Batch adsorption experiment
- Single column experiment
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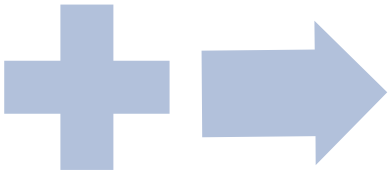
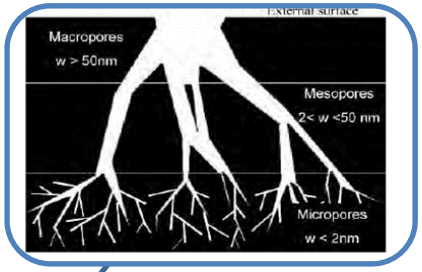
Activated carbon (AC)





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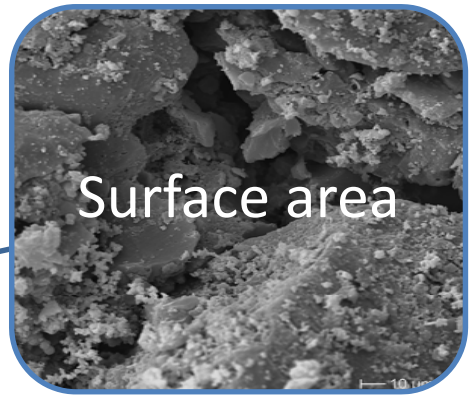
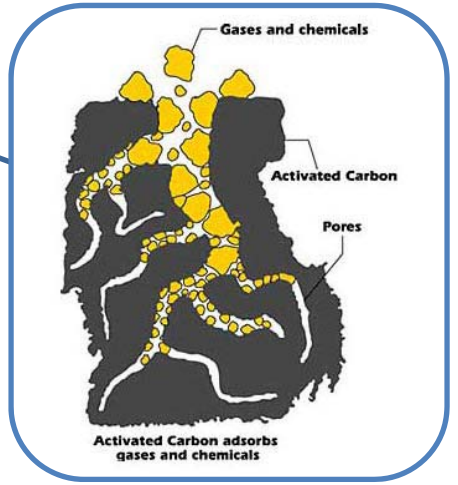




Heat
Pressure
Radiation

Activated carbon (AC)

Norit GAC 1240

Filtrasorb F400

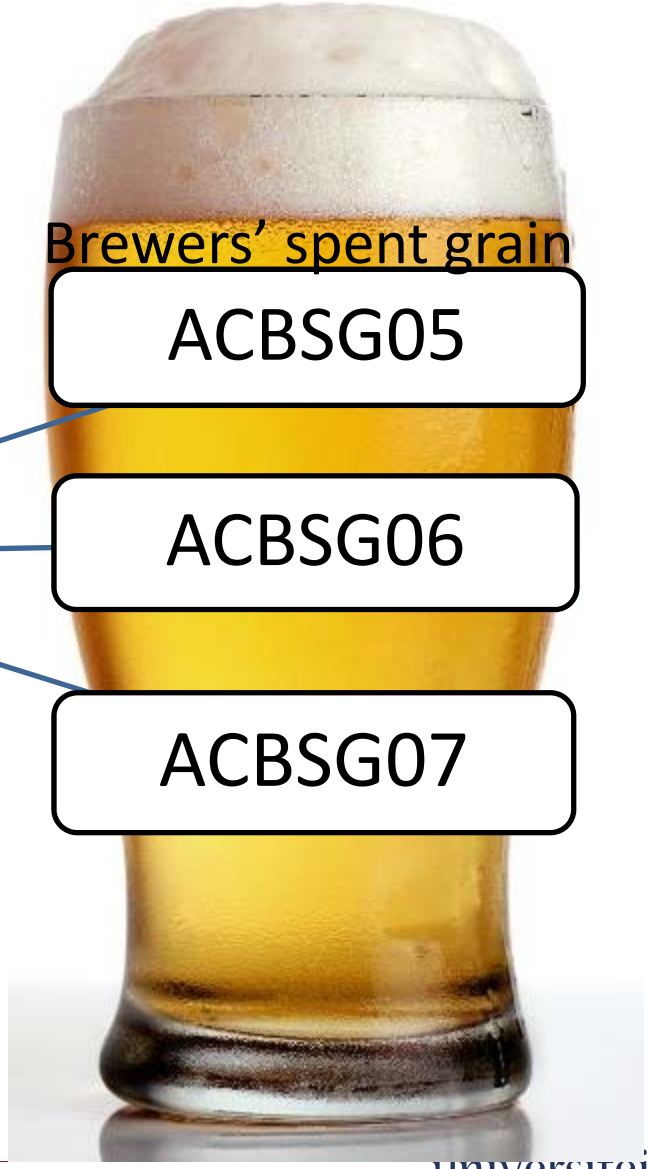
Commercial

Brewers' spent grain

ACBSG05

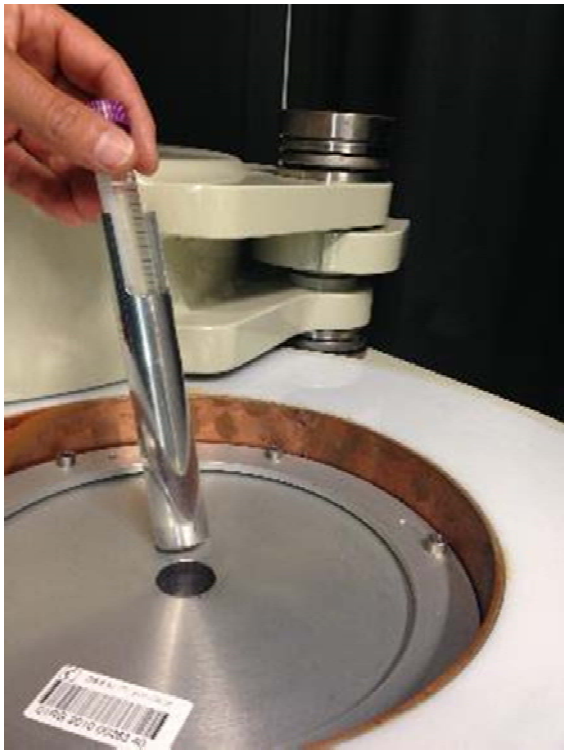
ACBSG06

ACBSG07

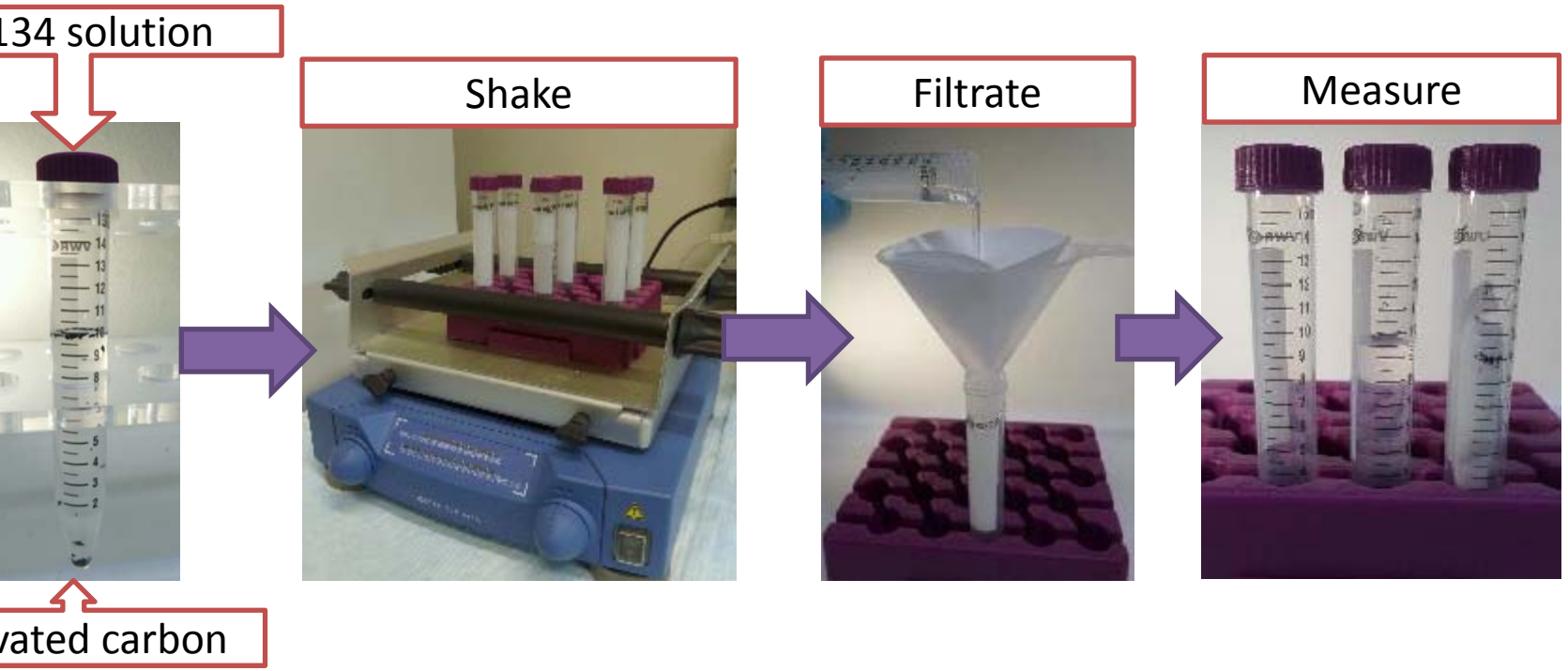


Experimental set-up

- Tracer: Cs-134
  - Cs standard (1000 mg/l)
  - Cs-133 + n -> Cs-134
- Diluted approximately 1:1000
  - ± 60 Bq/g = ± 1.18 mg Cs/l
- pH adjustment using ammonia
- NaI(Tl) well-type detector



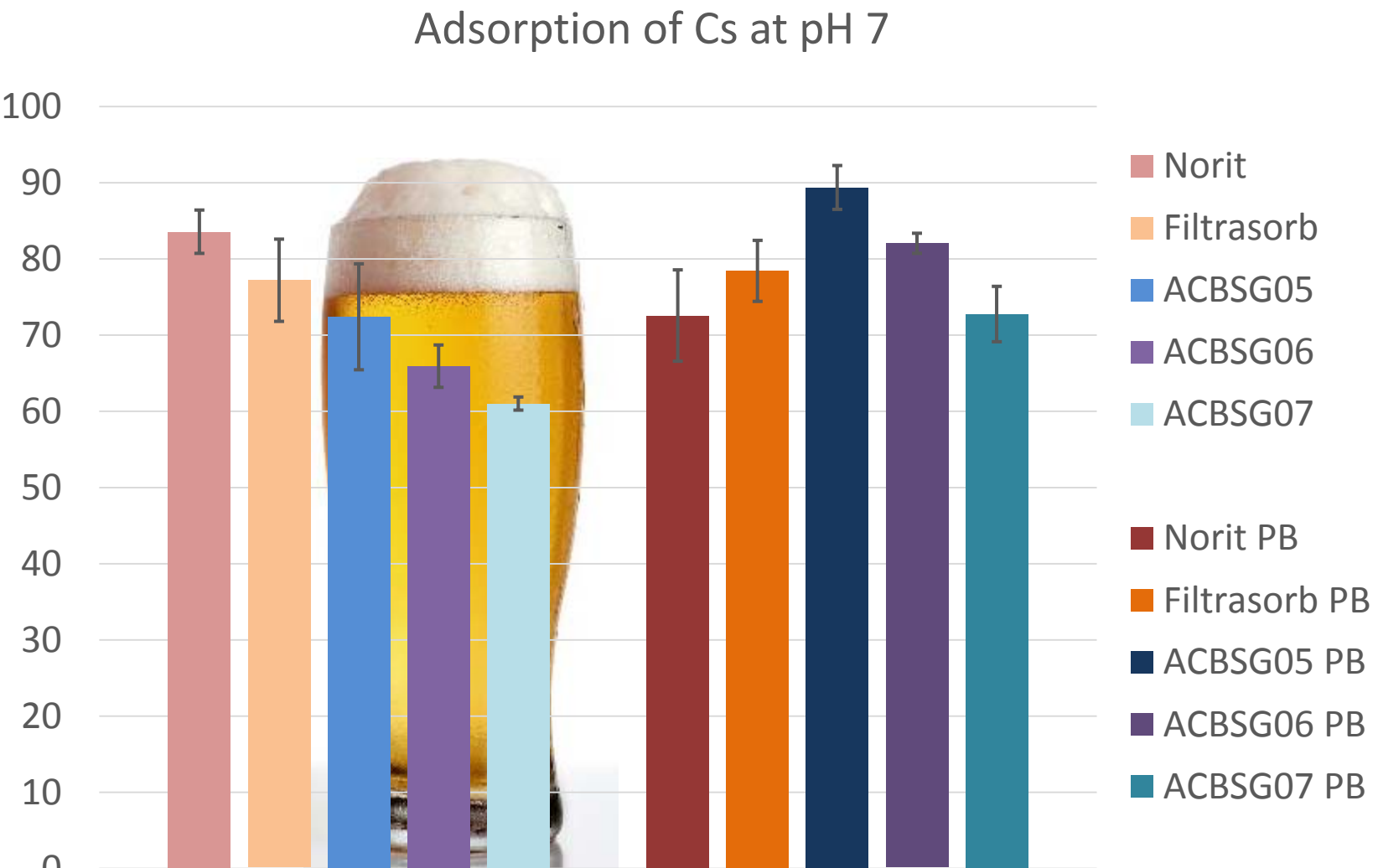
ch adsorption experiment



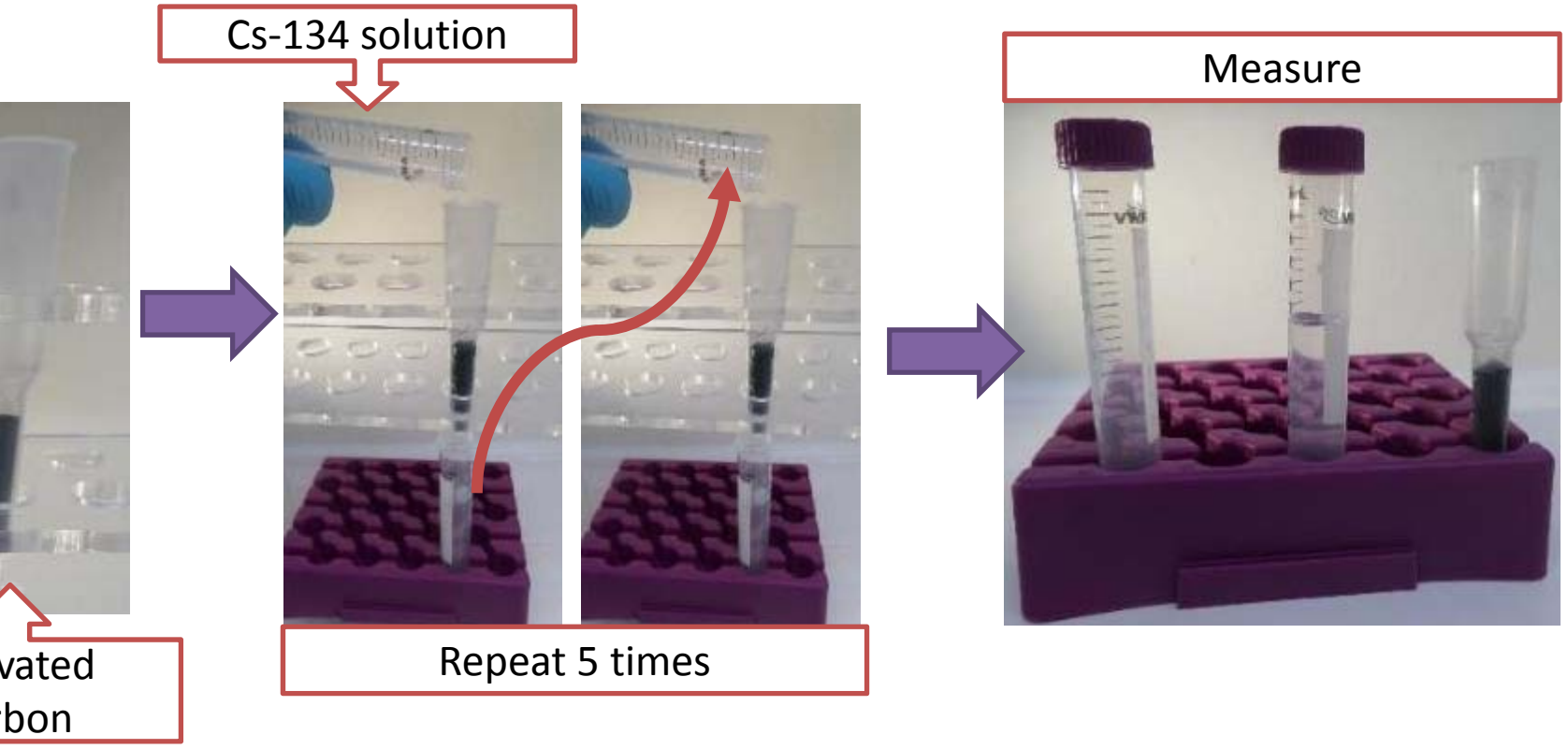
fluence of:

- pH
- Type of AC

ch adsorption experiment

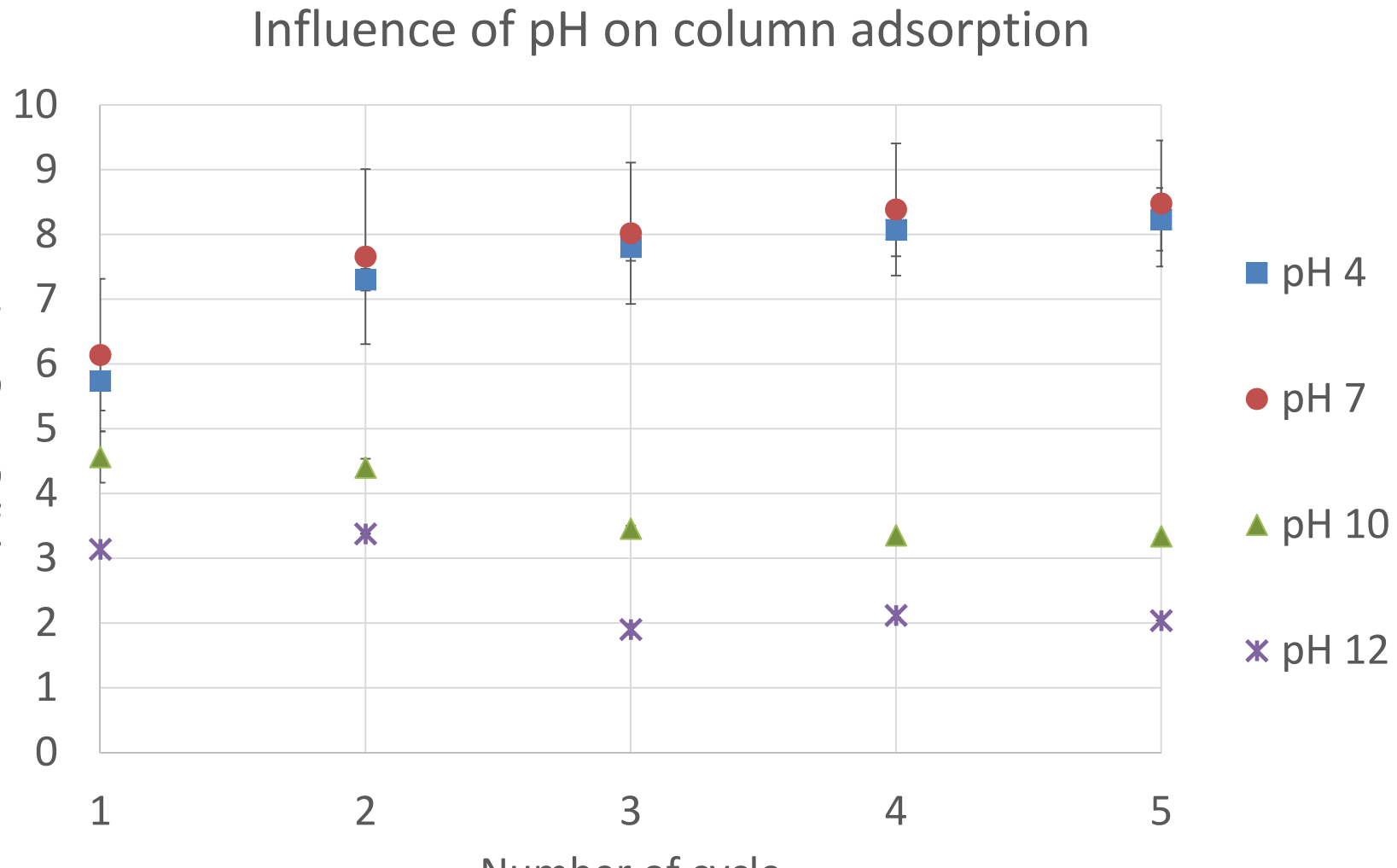


gle column adsorption experiment



etermine optimal pH (Norit)

gle column adsorption experiment



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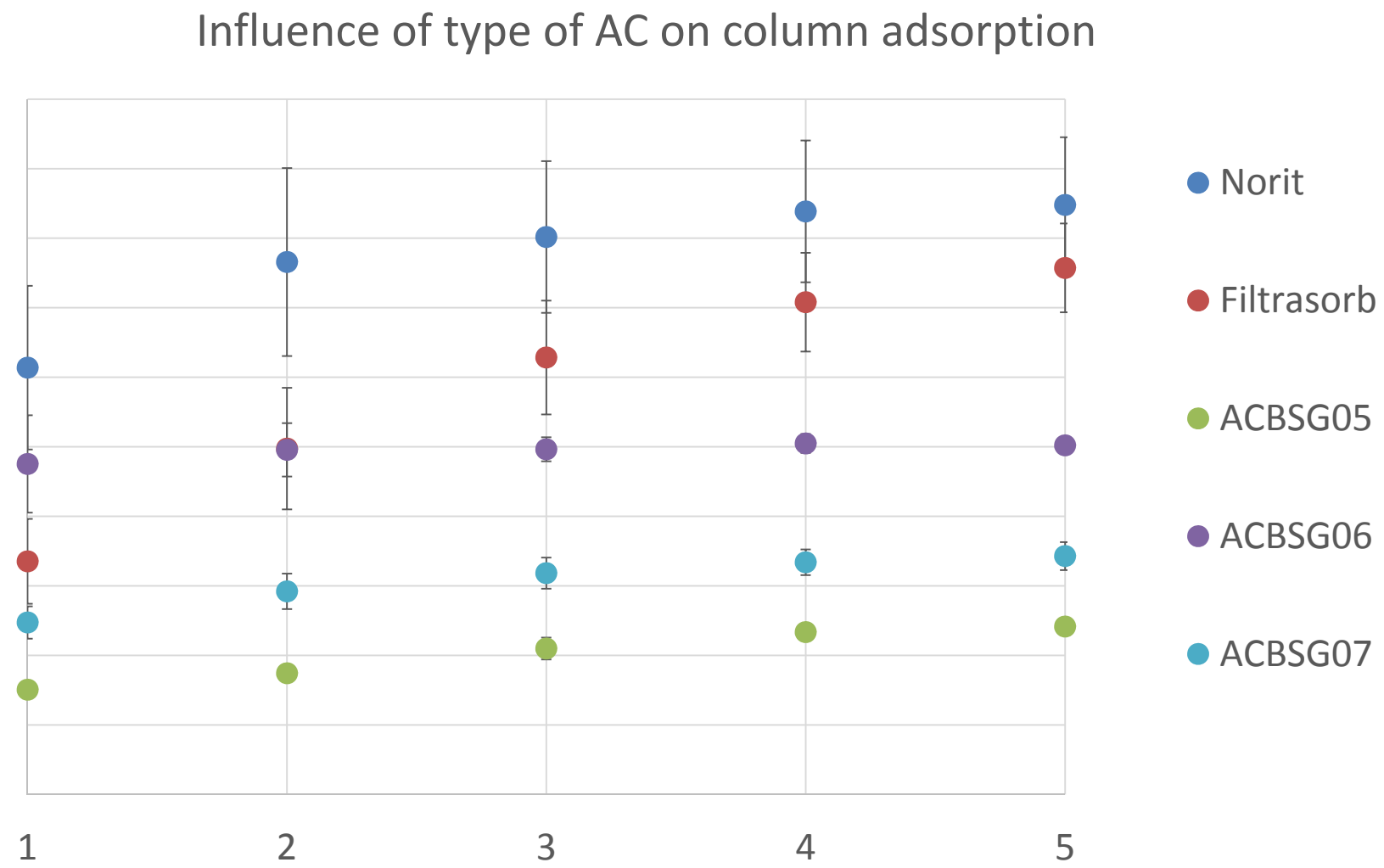

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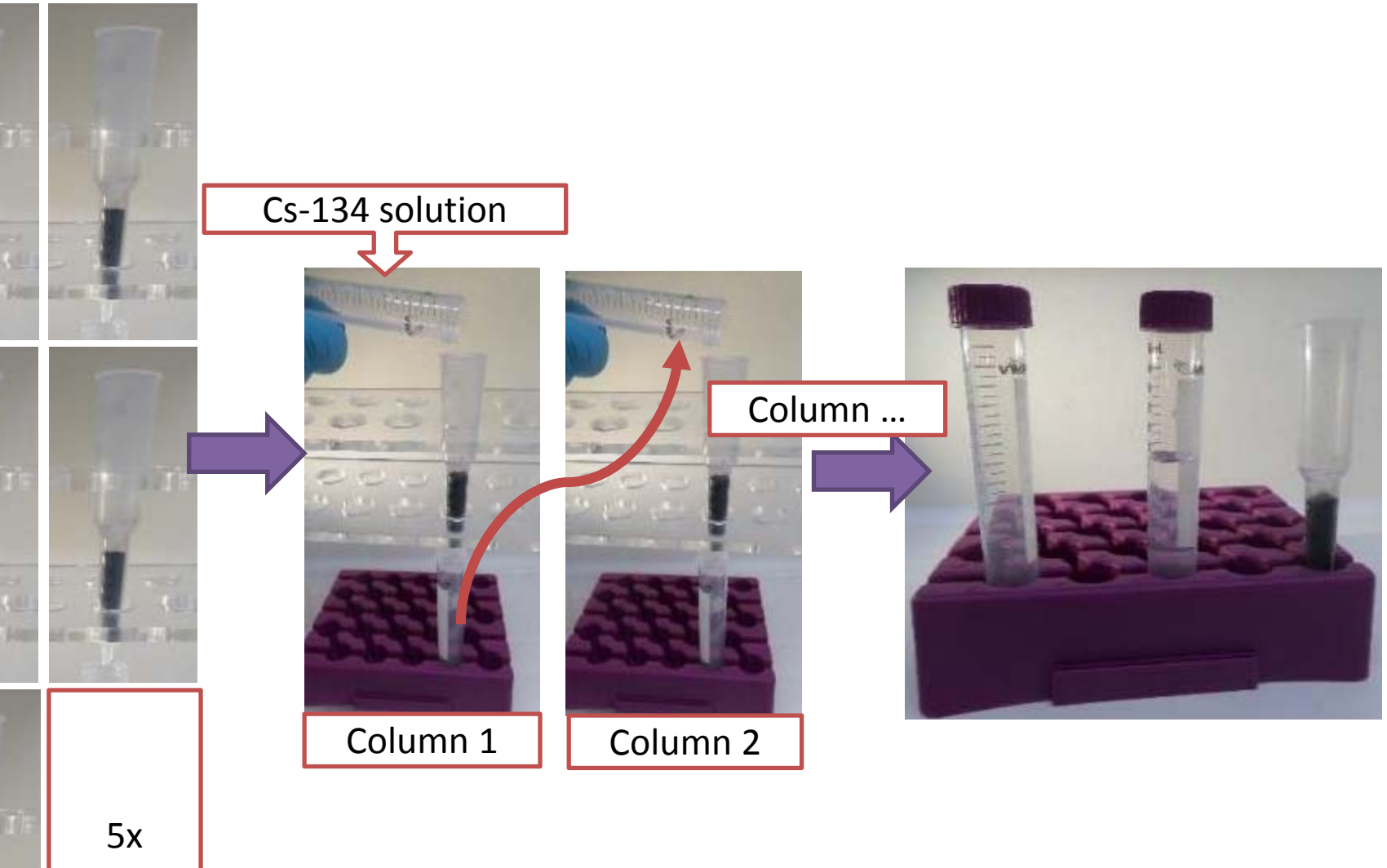

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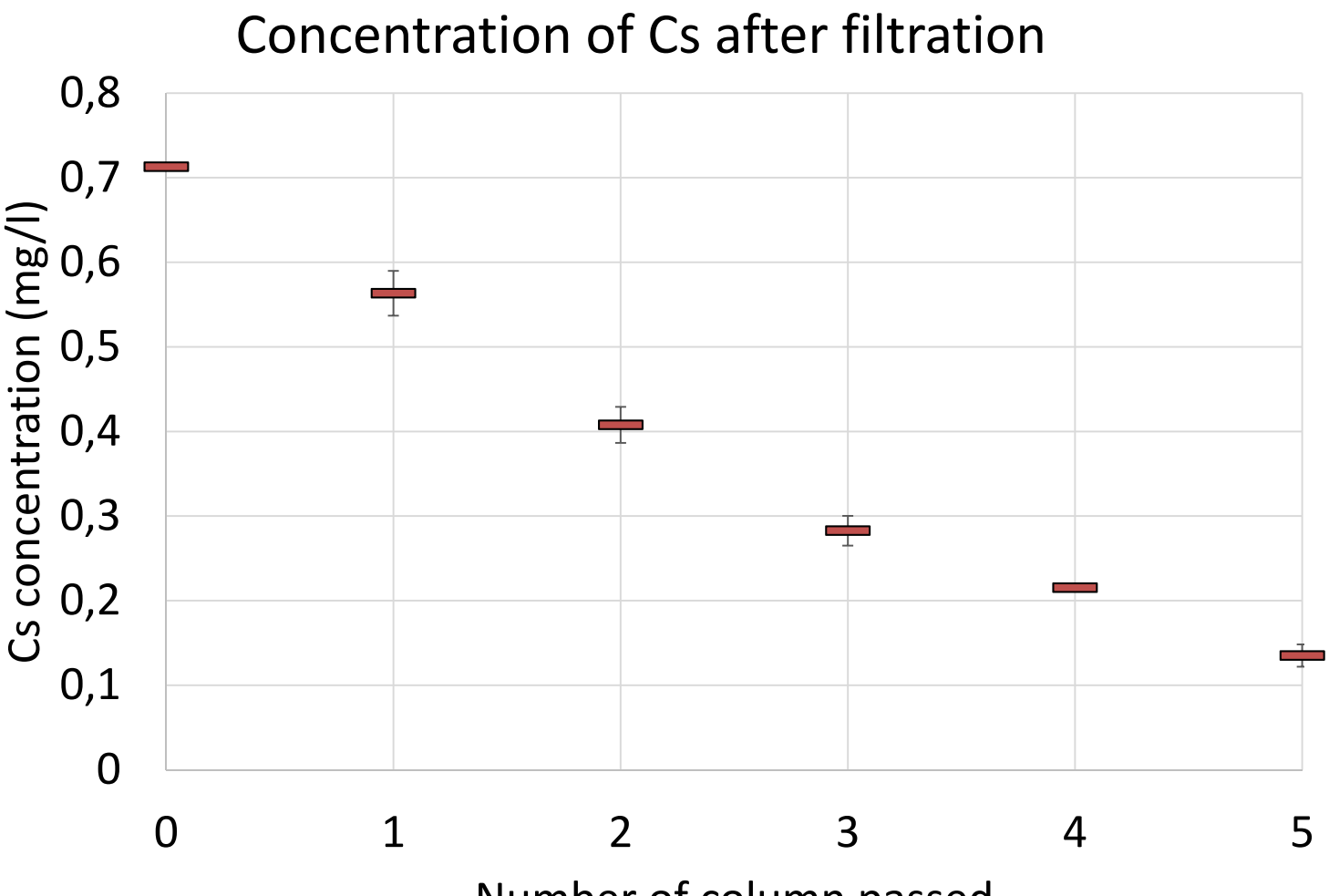

clusions

Batch adsorption experiments:

- pH, type of activated carbon, Prussian Blue pre-adsorption
- Insignificant differences

Single column experiment:

- Neutral to acidic pH
- Granular activated carbon

Sequential column experiment:

- Steady decline

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