# Article information:

Facile co-sintering process to fabricate sustainable antifouling silver nanoparticles (AgNPs)-enhanced tight ceramic ultrafiltration membranes for protein separation - ScienceDirect  
<https://www.sciencedirect.com/science/article/pii/S0376738819315418?via%3Dihub>

# Article summary:

1. A novel co-sintering process was developed to fabricate AgNPs-enhanced tight ceramic ultrafiltration membranes for protein separation.

2. The introduction of AgNPs into the membrane layer controlled the membrane surface charge properties and alleviated the sintering stress in the co-sintering process.

3. The AgNPs-enhanced ceramic membrane material exhibited a higher stability without silver leakage and provided sustainable antifouling properties for protein purification.

# Article rating:

May be slightly imbalanced: The article presents the information in a generally reliable way, but there are minor points of consideration that could be explored further or claims that are not fully backed by appropriate evidence. Some perspectives may also be omitted, and you are encouraged to use the research topics section to explore the topic further.

# Article analysis:

The article is generally reliable and trustworthy, as it provides detailed information on the fabrication of AgNPs-enhanced tight ceramic ultrafiltration membranes for protein separation using a novel co-sintering process. The article also provides evidence for its claims, such as the molecular weight cut-off of 9000 Da and permeance of 62 Lm−2h−1bar−1, as well as the isoelectric point of the membrane surface being controlled by the AgNPs (from 9.0 to 2.7). Furthermore, it mentions that such co-sintering process greatly decreased the fabrication period and energy consumption of ceramic membrane, which could be beneficial for industrial applications.

However, there are some potential biases in this article that should be noted. For example, it does not mention any possible risks associated with using silver nanoparticles in this application or any potential environmental impacts that may arise from their use. Additionally, while it does provide evidence for its claims, there is no discussion on any unexplored counterarguments or alternative approaches that could be used to achieve similar results. Finally, while it does mention that such a process could be beneficial for industrial applications, there is no discussion on how this technology could be implemented in an industrial setting or what challenges may arise from doing so.

# Topics for further research:

* Silver nanoparticle environmental impacts
* Alternative approaches for protein separation
* Industrial implementation of ceramic membrane technology
* Challenges of industrial ceramic membrane fabrication
* Risks associated with silver nanoparticles
* Energy consumption of ceramic membrane fabrication

# Report location:

<https://www.fullpicture.app/item/4d3866d5713f087013b4872d5b733ab3>