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**Starch-based semi-IPN hydrogel nanocomposite integrated with clinoptilolite:
preparation and swelling kinetic study**

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Highlights

- Addition of clinoptilolite improves swelling capacity of hydrogel nanocomposite.
- Hydrogel nanocomposite shows higher swelling rate due to its porous structure.
- Hydrogel nanocomposite presents improved mechanical strength and acceptable AUL.
- Hydrogel nanocomposite exhibits good salt and pH-sensitive swelling behavior.
- Hydrogel nanocomposite possesses reasonable water retention capability.

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