Supplementary Materials

Application of shrimp waste for the synthesis of polyurethane–chitosan materials with potential use in sorption of oil micro-spills in water treatment
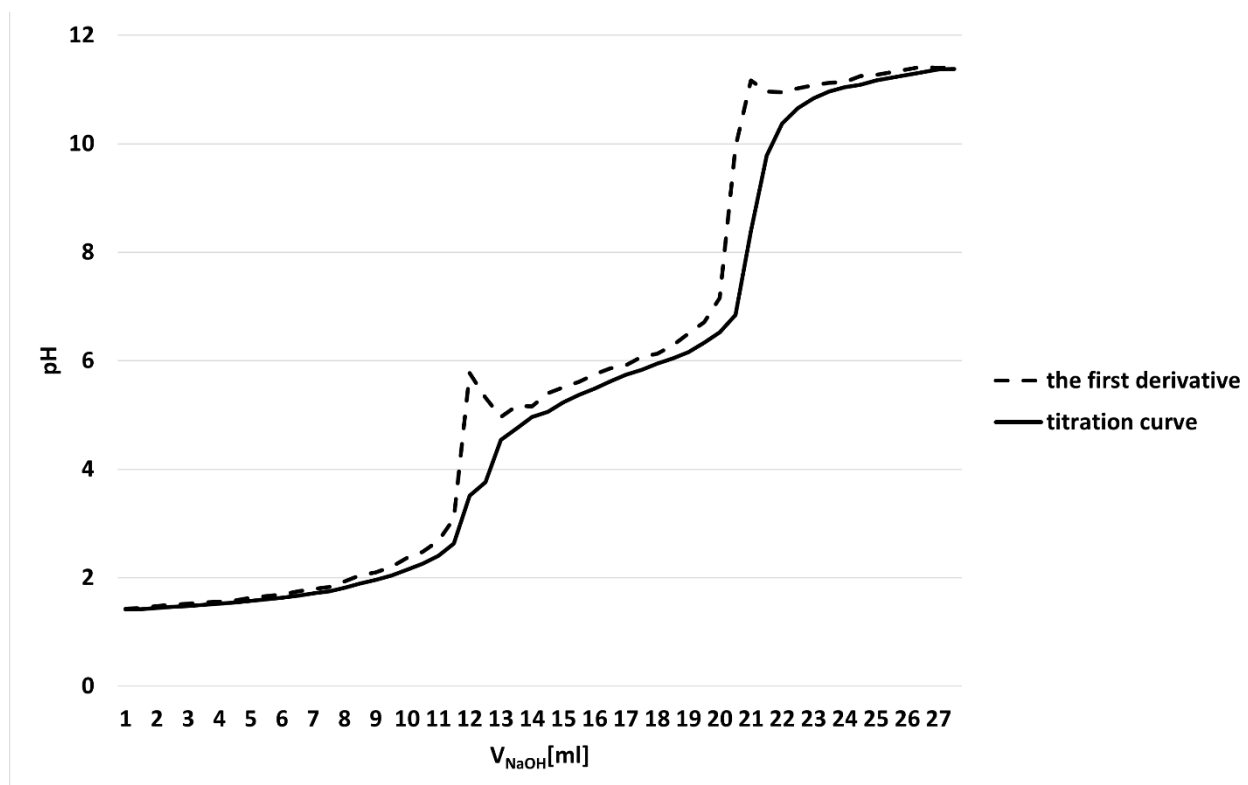

Figure S1. An example of a titration curve and it is the first derivative in determining DD of Ch

Table S1. Estimating the weights of individual factors that make up the strengths

No.	Strengths	Binary comparison[a]	Summary assessment[b]	Weight of the factor[c]
1.	Innovative value of the new products	**1**1 1 1 **2 3 4**	1	0.10
2.	Potential susceptibility of the studied materials for biodegradation in the natural environment after their use	**2 2 2** 3 4	4	0.40
3.	The use of new products in a circular economy	**3 3** 4	3	0.30
4.	The new products signs in the Green Deal strategy	**4**	2	0.20
			10	1.00

[a] the factor considered more important in each pair compared was bolded and underlined
[b] each number means how many times a given factor has been considered more important
[c] the weight of a factor is the quotient of its total score and the sum of all sum score factors

Table S2. Estimating the weights of individual factors that make up the opportunities

No.	Opportunities	Binary comparison[a]	Summary assessment[b]	Weight of the factor[c]
1.	Actions for a sustainable economy in the EU	**1** 1 1 **1 1** **2 3** 4 5	3	0.20
2.	Legal regulations encourage to research new, innovative and proecological products	**2** 2 **2 2** **3** 4 5	4	0.27
3.	Actions for elimination of petroleum pollutants in water treatment	**3 3 3** 4 5	5	0.33
4.	The possibility of obtaining external sources of financing for the studied materials	**4 4** 5	2	0.13
5.	Strong proecological social movements favoring all activities (producers) related to environmental protection	**5**	1	0.07
			15	1.00

[a] the factor considered more important in each pair compared was bolded and underlined
[b] each number means how many times a given factor has been considered more important
[c] the weight of a factor is the quotient of its total score and the sum of all sum score factors

Table S3. Estimating the weights of individual factors that make up the weaknesses

No.	Weaknessess	Binary comparison[a]	Summary assessment[b]	Weight of the factor[c]
1.	Low efficiency of the chitosan production process on a laboratory scale	**1 1** 2	2	0.70
2.	Initial stage of work on the tested new product	**2**	1	0.30
			3	1.00

[a] the factor considered more important in each pair compared was bolded and underlined
[b] each number means how many times a given factor has been considered more important
[c] the weight of a factor is the quotient of its total score and the sum of all sum score factors

Table S4. Estimating the weights of individual factors that make up the threats

No.	Threats	Binary comparison[a]	Summary assessment[b]	Weight of the factor[c]
1.	Competition of companies producing materials with similar properties	**1** 1 **2**	1	0.30
2.	Global economic interests of industry sectors	**2**	2	0.70
			3	1.00

[a] the factor considered more important in each pair compared was bolded and underlined
[b] each number means how many times a given factor has been considered more important
[c] the weight of a factor is the quotient of its total score and the sum of all sum score factors