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New titanium based coagulant application for organic matter concentrate from natural waters

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The knowledge about water ecosystem function expansion is cause of structure and behaviour studies of substances that present in water environment in very small amounts. So a way to concentrate them without transformation has the large meaning for sure identification and analysis.

The high-effective titanium-based coagulant application is the one of ways for heterocoagulation concentration. It allows to concentrate organic matter and to get them from natural water. The high degree concentration is reached due to multilayer mechanism of organic capture. The mechanism includes adsorbtion on the active centres, microfiltration and sorbtion in micropores.

The titanium-based coagulant has two features that make it more prefer for organic concentration:
1st is high capture degree (up to 40000 times);
2nd is working effective at low temperatures (0.5-8°C).

The method of concentration was tested on natural waters with various muddy, colourity, alkalinity and pH with samples of water from rivers of Neva, Moscow, Seine and lake of Sestroretsky Razliv (near St.-Petersburg). There have been found and are investigating now natural silicoorganic compounds not so poisonous, but undesirable in many technological processes.

The new coagulant has occupied a place not only as a water-purifying agent but also as the tool of natural water analysis.