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| Program | Program NUCLEU PN 06 12 03 01 |
| Project title (ENG): | Assessment of emerging techniques adsorptive bubble separation (ionic flotation / precipitation flotation and flotation of colloidal adsorption) surface-active substances in aqueous systems |
| Project title (RO): | Evaluarea tehnicilor emergente de separare prin bule adsorbtive (flotatie ionica/ flotatia precipitatelor si flotatia de adsorbctie coloidala) a substantelor superficial active din sisteme apoase |
| Duration | 2006-2008 |
| Team Leader | dipl.eng. Dinu Laurentiu |
| Summary (short description) ENG | <p>Evaluation of the technological techniques for adsorptive bubble separation of the surface-active substances from aqueous systems</p> <p>Establishing correlations with surface-active substances in structural sensitivity to the implications of separating the aqueous systems with specific matrices contamination</p> <p>Performance Analysis of the adsorptive bubble separation process in conjunction with conventional methods of treating water contaminated with surface-active substances; dissolved air flotation and electroflotation-electrocoagulation</p> <p>Investigation of degradation processes by photo-oxidation of organic pollutants (alkyl sulfates, alkylbenzene sodium) in foams.</p> <p>Techniques and technologies for the separation of substances by adsorption flotation and colloidal -precipitates flotation</p> <p>Main result- Treatment technology for effluents heavily contaminated with anionic surfactants, best for alkylbenzenesulphonates or alkanesulphonates. The technology allows achieving low residual concentrations, so the effluent can be further be processed by biological treatment steps.</p> |
| Summary (short description) RO | <p>Identificarea si evaluarea tehnologica a tehnicilor de separare prin bule adsorbtive a substantelor superficial active din sisteme apoase, in scopul imbunatatirii fluxurilor de tratare/ epurare apa.</p> <p>Stabilirea corelatiilor structura- reactivitate la substantele tensioactive cu implicatii in separarea din sisteme apoase cu matrici specifice de impurificare</p> <p>Analiza performantelor procedelor de separare cu bule adsorbtive in conjunctie cu procedeele clasice de tratare a apelor contaminate cu substante tensioactive; flotatie cu aer dizolvat si electroflotatie-electrocoagulare.</p> <p>Investigarea unor procese de degradare fotooxidativa a unor poluanti organici (alchil sulfati, alchilbenzensulfonati de sodiu) in sisteme disperse cu bule spumante, in vederea stabilirii oportunitatii integrarii in fluxurile tehnologice pentru includere in cadrul fluxului tehnologic pentru epurarea apelor reziduale cu continut de tenside a unor alternative de pretratare sau finisare bazate pe tehnicile de fotooxidare, alaturi de flotatia precipitatelor/ flotatie de adsorbctie.</p> <p>Tehnici si tehnologii de separare a substantelor tensioactive anionice prin flotatie de adsorbctie coloidala si flotatia precipitatelor.</p> <p>Rezultat principal -Tehnologie de epurare efluenti puternic impurificati cu surfactanti anionici, cel mai bine din categoria alchilbenzensulfonatilor sau alcansulfonatilor. Tehnologia permite atingerea unor concentratii remanente de surfactanti anionici de ordinul mg/l, efluentul putand intra in trepte de epurare biologica.</p> |

| Dissemination of results | |
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| Conferences (platform, poster, abstract / full-paper) | Mihai Stefanescu, Cristina Cosma, Margareta Nicolau, <i>Advanced treatment of industrial wastewater containing refractory surfactants</i> , 1 st European Chemistry Congress-EuCheMS, European Association for Chemical and Molecular Science, Budapesa, 27-31Aug. 2006 |
| | Mihai Stefanescu, L Constantin, Andreea Moise, Cristina Cosma, <i>Anionic surfactants removal from aqueous systems by flotation using dissolved air (DAF)</i> , Romanian International Conference on Chemistry and chemical engineering, RICCE XV, 22-22 Sept 2007 |
| | Dinu Laurentiu, Stoica Ligia, Nitoi Ines, Bumbac Costel, Patroescu Viorel, Moise Andreea, <i>Anionic Surfactants Oxidation Using AOPs And A Novel "In-Foam Uv/Air Oxidation" Process</i> , International Workshop "Global And Regional Environmental Protection" Glorep 2010, 26-28 November, 2010, Timisoara – Romania |