Program	**PN II – P4-D7-C1-1815 (ctr. Nr. 71-025/14.09.2007)**
Project Leader Institution (CO)	University POLITEHNICA of Bucharest
Project title (ENG):	**Polysulfone – polyaniline functionalised nanocomposites for bio - analyses and bio-separations.**
Project title (RO):	**Nanocompozite polisulfona-polianilina functionalizate pentru bioanaliza si bioseparari**
Duration	2007-2010
Partner 1 Leader	Senior Researcher Eng. Gheorghe BATRINESCU
Summary (short description) ENG	The specific objectives of the project with the acronym NANOBIOPAS for the P1 INCD ECOIND partner are : the critical analysis of methods for immobilization of soluble and insoluble state enzymes on functionalized nano-composite materials, to establish the nanocomposite polysulphone –polyanyline materials capacity to immobilize the α-amilase, amilgucosidase urease and invertase enzimes, design, execution and demonstration of an experimental/pilot plant operation for obtaining continuous flow nano-composite materials, with reproducible characteristics. The project results have been materialized in new nano-materials of immobilised enzimes type on the functionalized membranes and the execution of the experimental/pilot model plant for obtaining nanocomposite materials in continous flow plant, with reproducible characteristics that has been also patented. The new nano-composite materials based on polysulphone and polyanyline, obtained both at the laboratory level and in the experimental continuus flow functioning plant have been used in different processes of selective bioseparation of some biologic active compounds.
Summary (short description) RO	Obiectivele specifice ale proiectului cu acronimul NANOBIOPAS corespunzatoare partenerului P1 INCD ECOIND au constat in analiza critica a metodelor de imobilizare a enzimelor in stare solubila si insolubila pe materiale nanocompozite functionalizate, in stabilirea capacitatii materialelor nanocompozite din polisulfona-polianilina de a imobiliza enzimele α-amilaza, amiloglucozidaza, ureaza si invertaza, proiectarea, realizarea (executia) si demonstrarea functionalitatii unei instalatii experimentale pentru obtinerea in flux continuu de materiale nanocompozite, cu caracteristici reproductibile. Rezultatele proiectului s-au materializat prin obtinerea de noi nanomateriale de tipul enzimelor imobilizate pe membrane functionalizate si prin realizarea si brevetarea instalatiei model experimental de obtinere in flux continuu de materiale nanocompozite, cu caracteristici reproductibile. Noile materiale nanocompozite pe baza de polisulfona si polianilina, obtinute atat la nivel de laborator cat si pe instalatia cu functionare continua au fost utilizate in diverse procese de bioseparare selectiva a unor compusi biologic activi.
Dissemination of results	
PhD Thesis – Title RO, ENG	Separarea proteinelor prin membrane compozite polisulfona-polianilina – 2011, Adriana Cuciureanu. Protein separation using polysulphone-polyaniline composite membranes

Full-paper ISI	Adriana Cuciureanu, Gheorghe Batrinescu, Niculina Nina Badea, Doina Antoneta Radu, Gheorghe Nechifor, 2010, The Influence of Changing the Polyaniline and Polysulphone Ratio on Composite PSF-PANI Membranes Performances, *MATERIALE PLASTICE*, Vol.47, Issue 4, p. 416-420, Print ISSN 0025-5289.
	Gheorghe Batrinescu, Mirela Alina Constantin, Adriana Cuciureanu, Gheorghe Nechifor, 2014, Polysulfone-Polyaniline – Tipe Membranes Obtained in a Steady-State System: Structural and Hydrodynamic Characteristics, *POLYMER ENGINEERING AND SCIENCE*, Vol. 54, Issue 7, p. 1640-1647, Print ISSN 0032-3888, Online ISSN 1548-9596.
Book chapter	Aurelia Cristina Nechifor**,** 2009, MEMBRANE POLIMERICE, Ed. Printech, ISBN 978-606-521-427-9, 200 pg.; *Cap.7 – Gheorghe Batrinescu, Ovidiu Popa, Gabriela Paun Roman, Aurelia Cristina Nechifor*, NANOCOMPOZITE IN SEPARARI MEMBRANARE, pg. 171-200.
	Gabriel-Lucian Radu, 2009, TEHNICI EXPERIMENTALE IN BIOANALIZA, vol.VIII, Ed. Printech, ISBN 978-606-521-439-2, 194 pg.; *Cap. 4 – Gabriela Paun**,** Gheorghe Batrinescu**,** Elena Neagu, Gabriel-Lucian Radu*, ENZIME IMOBILIZATE SI APLICATIILE LOR IN BIOTEHNOLOGII, pg. 104-129.
Conferences (platform, poster, abstract / full-paper)	Adriana Cuciureanu, Gheorghe Batrinescu, Stefan Ioan Voicu, Gheorghe Nechifor (2010) - Composite membranes for BSA separation, XXV th International Symposium on Physico-Chemical Methods of Separation – ARS SEPARATORIA, Torun, Poland.
	Gh. Batrinescu, A. Cuciureanu, E. Birsan, 2011 – Reduction of organic compounds content of the wastewater milk industry using composite permselective materials, International Symposium – SIMI 2011 „The Environment and Industry", Bucharest;
	Doina Radu, Adriana Cuciureanu, Gabriela Paun Roman, Gheorghe Batrinescu, 2011 – Colloid and nanofiltration on nanocomposite polymeric membranes, International Conference of Young Researchers New Trends in Environmental and Materials Engineering (TEME-2011), Galati, Romania;
	Alina Constantin, Veronica Ionela Foamete, **Gheorghe Batrinescu**, Stanislaw Koter (2013) – Characterisation of membrane surface by streaming potential measurements, International Conference on Methods and Materials for Separation Processes, Swieradow Zdroj, Poland.
Patents	**RO126195-B1/30.09.2014:** Gheorghe Batrinescu, Adriana Cuciureanu, Carol Lehr – *Instalatie pentru realizarea de materiale permselective nanocompozite functionalizate / Installation for producing functionalized nanocomposite permselective materials.*