



# RECOVERY OF NON DESIRED COMPOUNDS FROM SIDESTREAM PROCESSES

- SUSTAINABLE TECHNOLOGIES** → EXTRACTION, CONCENTRATION, PURIFICATION, FRACTIONATION OF NATURAL PRODUCTS  
 → PHARMACEUTICAL, NUTRITIONAL AND COSMETIC MARKETS



- WORLDWIDE LOCATIONS** → MADRID, ZARAGOZA, INDIA, CANADA AND USA → ~100 EMPLOYEES
- SOLUTEX OBJECTIVE** → INCREASING KNOWLEDGE AND EXPERIENCE IN THE PROCESS OF SIDESTREAMS OBTAINED IN INDUSTRIAL PROCESSES  
 → OBTAINING INTERESTING PRODUCTS FOR THE OLEOCHEMICAL SECTOR

THE PROPOSED IDEA ADDRESS THE TRANSFORMATION OF SIDE STREAMS IN THE EXTRACTION OF NON DESIRED COMPOUNDS OF HIGH VALUE ADDED OLEOCHEMICAL PRODUCTS

→ GROWTH OF ECONOMIC AND ENVIRONMENTAL SUSTAINABILITY

1. SUPERCRITICAL FLUID EXTRACTION:

- EMPLOYS CO<sub>2</sub> IN SUPERCRITICAL STATE AS A SOLVENT
- LOW PROCESS TEMPERATURE
- CONSTITUTES THE MOST EFFICIENT TECHNOLOGY AND THE PUREST WAY TO OBTAIN THE EXTRACTS IN TERMS OF CONTAMINANTS / POPS

2. SUPERCRITICAL FLUID CROMATOGRAPHY:

- EMPLOYS CO<sub>2</sub> IN SUPERCRITICAL STATE, BEING THE COLUMN FILLING THE STATIONARY PHASE
- LOW PROCESS TEMPERATURE
- DIFFERENT FRACTIONS OBTAINED
- LEVEL OF PURITY HIGHER THAN SFE

3. MOLECULAR DISTILLATION:

- SEPARATION TECHNIQUE BY BOILING POINT OF THE COMPONENTS
- SELECTIVE, LOW COST
- FIRST PART OF THE INDUSTRIAL PROCESS, FOLLOWED BY THE OTHER TECHNOLOGIES

4. COLD PRECIPITATION:

- WORKS WITH THE DIFFERENCE IN THE FUSION POINTS OF THE COMPOUNDS TO BE SEPARATED
- SELECTIVE TECHNIQUE, PURIFIED PRODUCTS CAN BE OBTAINED

5. BIO-CATALYZED REACTIONS:

- SELECTIVE CONVERSION IN TO OTHER MOLECULAR FORM: I.E. TRIGLYCERIDE
- NO RESIDUES, SOFT TEMPERATURE CONDITIONS, ENZIME RE-USE

➔ **BIO-SOLVENTS** ➔ PAINTS AND COATING, ADHESIVES, PHARMA, COSMETICS AND PRINTING INKS

➔ **BIO-PLASTICS** ➔ PACKING AND PACKAGING, ICT, DISPOSABLES, AUTOMOTIVE, SANITARY, AGRICULTURE

# MARKET ANALYSIS

## 1. BIO-SOLVENTS MARKET

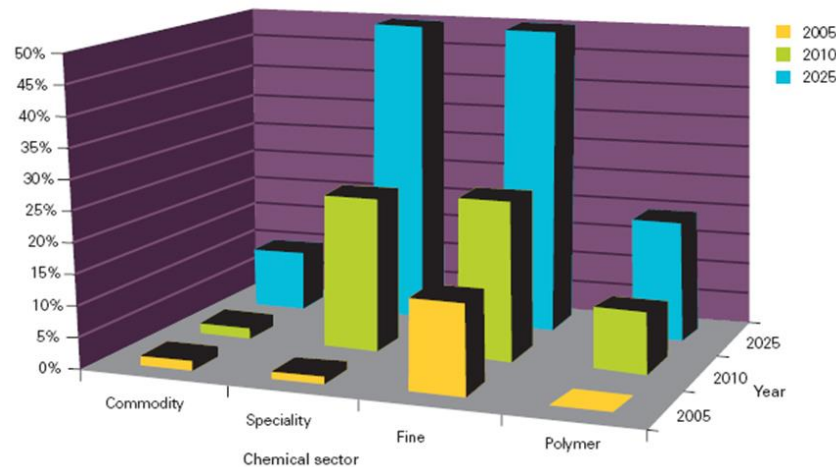
- MARKET IS SEGMENTED IN DIFFERENT AREAS: NORTH-AMERICA, ASIA-PACIFIC, AND REST OF THE WORLD
- EUROPE → SOLVENTS MARKET PRODUCED 5 MILLION TONS IN 2010 → 0,63 MILLION TON OF BIO-SOLVENTS
- ESTIMATED ANUAL GROWTH OF 4.8%, ACHIEVING 1.1 MILLION TONS IN 2020 (EU INNOVA-BIOCHEM 2010)

## 2. BIO-PLASTICS MARKET

- SALES OF 2,74 BILLION \$ IN 2010
- ESTIMATED VALUE IN 2015 OF 11,4 BILLION \$



EXPECTED SIGNIFICANT GROWTH OF BIO-PRODUCTS USE IN THE CHEMICAL SECTOR, MAINLY IN FINE CHEMICALS AND SPECIALTIES UNTIL 2025



Source: Lead Market Initiative on Bio-Based Products™

- THE SALES MARGIN GROWTH OF THE MANUFACTURED PRODUCTS WILL BE MINIMUM 100% WITH RESPECT TO THE VALUE OF THE SIDESTREAM IN THE MARKET → BIO-SOLVENT, BIO-EMULGENTS AND BIO-SURFACTANTS

→ 10 TIMES PROFITABILITY IF THE FINAL MARKET IS FINE CHEMICALS

- EXPECTED PAY-BACK PERIOD OF 24 MONTHS

- VALUATION OF SIDESTREAM PROCESSES

→ INTEGRAL EXPLOITATION OF THE RAW MATERIALS

→ SUBSTITUTION OF FUEL AS AN EXCLUSIVE SOURCE OF CHEMICAL PRODUCTS



**OBJECTIVES OF  
SUSTAINABLE  
CHEMISTRY**

- CIRCULAR ECONOMY PROCESSES → LEADS TO THE OPENING OF NEW MARKET NICHES

# CONTACT DETAILS

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