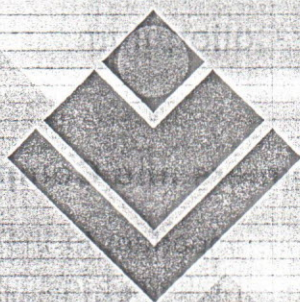


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and network formation. The starch foams were characterized by mechanical properties (strength, flexibility, density) and compared with other material packaging, such expanded polystyrene foam (EPS) and coated paperboard (PB). Starch foam presented no significant difference ( $p < 0.05$ ) in strength and flexibility properties compared with other materials. According the biodegradation analysis, the starch foam was biodegraded in 20 days and the cytotoxicity analysis indicated that the product is non toxic.

**Poster 116**
**CHARACTERIZATION OF THIN FILMS OF CARBOXYMETHYLCELLULOSE ACETATE BUTYRATE**

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Thin films of carboxymethylcellulose acetate butyrate have been deposited onto silicon wafers by spin coating. Ellipsometry was performed to determine film thickness. It was found that the film thickness depends linearly on polymer concentration. AFM images revealed that CMCAB spin coated films from solutions prepared in ethyl acetate were homogeneous and flat. While, films obtained from solutions in acetone were very rough. Regardless the solvent used in the film preparation, after annealing all films became flatter. Contact angle measurements showed that CMCAB film surfaces do not suffer molecular re-orientation at the solid-air interface, after annealing.

**Poster 117**
**SURFACE WETTING AND DMA CHARACTERIZATION OF ZEIN/OLEIC ACID BASED FILMS**

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The objective of this study was to evaluate the effect of oleic acid (OA) addition as plasticizer on mechanical and wetting properties of zein thin-films. The films, typically hydrophobic, were obtained by casting from ethanol solutions with different concentration of OA, and water contact angle and tensile properties characterized. No significant effect was observed in the surface wetting value on the films independent of the composition. All samples presented similar contact angle (around 68°) with a general trend to a receding drop along the time. Evaluations of mechanical properties by DMA (Dynamic Mechanical Analysis) showed an enhancement of tensile strength and elongation with the presence of plasticizer. 1% wt of OA showed to have a good effect on mechanical properties for long term film storage.

**Poster 118**
**PREPARATION AND CHARACTERIZATION OF CHITOSAN PARTICLES CROSSLINKED WITH PENTASODIUM TRIPOLYPHOSPHATE**

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The use of natural polymers in dosage form design has received considerable attention, especially from the viewpoint of safety. Processing techniques for the preparation of chitosan (CS) microspheres have been extensively developed since the 1980s. Ionotropic gelation is one of the more used crosslinking technique described in literature. Although the various reports, the papers optimize the preparation conditions for a particular CS used. This work focuses the ionotropic gelation in terms of the generalized charge ratio ( $R_{\pm}$ ) between CS (+) and a crosslinking agent (-), for CS with different molecular weight and deacetylation degree. The crosslink agent used was the pentasodium tripolyphosphate (TPP). The extension of crosslinking was monitored in terms of hydrodynamic mean diameter of particles and polydispersity. The results show the generalized profiles of mean diameter vs. ( $R_{\pm}$ ), modulating regions where nano e microparticles are obtained. The particles were also characterized by the final surface charge. These results are useful for the various medical applications of chitosan particles.

**Poster 119**
**AMYLOSE BEHAVIOR IN ALKALINE AND NEUTRAL IONIC SOLUTIONS: A COMBINED STATIC AND DYNAMIC LIGHT SCATTERING STUDY**

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Combined Static (SLS) and Dynamic (DLS) Light Scattering measurements were carried out to study modifications on amylose (DP 100) in alkaline and neutral solutions. Chain dimensions were investigated during store. The results showed that the random coil structure of the chains in both media was not affected by solvent

concentration in unstored samples. Nevertheless, this parameter has a crucial influence when the solutions were stocked. The hydrodynamic radii of all samples have been reduced by increasing the storage time, independent of the solvent (KOH or KCl solutions). Additionally, in concentrated KOH solutions, the polymer presented, as a general rule, an increase in  $R_g$  values increasing storage time. The electrostatic repulsion promoted by salt screening and the polymer-polymer interaction are the probable effects responsible by the inverse profile observed increasing KCl concentration.

**Poster 120**
**RHEOLOGICAL CHARACTERIZATION TO UNDERSTANDING THE INTERACTION MECHANISM IN STARCH-PROTEIN SYSTEMS**

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Molecular changes that happen in the ingredients during industrial process of food products interfere directly in their typical attributes. Characterization of food pastes can be used to understanding the interaction mechanism in starch-protein systems. In order to investigate the effects of the individual components on rheological properties, blends with different soy protein isolate/gluten/starch ratios were studied. The effect of starch was also investigated by using different types of starch - wheat, corn and tapioca. The rupture strength, hardness, deformability, firmness and penetration strength values of the gels, determined by texture analyzer under controlled conditions, were observed. This study indicated that there are large correlation differences between the rheological properties. The effect of soy protein isolate was greater than that of gluten and starch and a similarity of the behaviour was observed from corn and wheat starches.

**Poster 121**
**SYNTHESIS AND PHOTOPHYSICAL PROPERTIES OF ANTHRACENYL-LABELLED POLYSILOXANES**

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In this work we synthesized fluorescent silicones by the using hydrosilylation reaction of the elastomer with a fluorescent probe. The fluorescent moieties were chemically bonded in polymeric chain and in same time that siloxane elastomer was crosslinking. To verify the incorporation of the probe in lateral chain was used steady-state and time-resolved spectroscopy techniques. 9-vinylanthracene was the fluorescent reagent. For spectroscopic model compound we used the 9-methylanthracene. Thermal transitions of the siloxanes were studied using both dynamical scanning calorimetry and the results were compared with that using fluorescence spectroscopy in a range of temperature from 30 K to 410 K. The values found using DSC technique, were about 153 K to glass transition, 198 K to crystallization and 238 K to melting point, comparing with fluorescence spectroscopy the values for glass transition were about 150 - 250 K.

**Poster 122**
**ETHYLENE AND 10-UNDECEN-1-OL COPOLYMERIZATION WITH THE CATALYST SYSTEM DADNi(NCS)<sub>2</sub>/MAO AT HIGH PRESSURE**

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The catalyst DADNi(NCS)<sub>2</sub> (DAD = ArN=C(Me)-C(Me)=ArN); Ar = 2,6-C<sub>6</sub>H<sub>3</sub>), activated by methylaluminoxane (MAO) was tested in copolymerization of ethylene and 10-undecen-1-ol, protected with IPRA, at high pressure. The best activities were obtained at low polar monomer concentrations. The incorporation of the comonomer increased with the increase of the polar monomer concentration. The quantification of branches by NMR showed that all the polyethylenes were highly branched. High ethylene pressure decreased the polar monomer incorporation.

**Poster 123**
**THE INFLUENCE OF DONOR AND ACCEPTOR GROUPS IN CONJUGATED COPOLYMERS**

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Poly(1,4-phenylene-alt-3,6-pyridazine) (COP-PIR) and poly[(1,4-phenylene-alt-3,6-pyridazine)-co-(1,4-phenylene-alt-9,9-dioctylfluorene)] (COP-PIR-FLUOR) were synthesized by Suzuki reactions with good yield (74 and 86%, respectively) in order to observe the influence of the donor and acceptor group in the conjugated copolymer. The polymers were very soluble in organic solvents. The absorbance and emission spectra show the great influence of the fluorene group, that represents only 5% of the copolymer chain, with a displacement of 55 nm to the blue emission concerning poly(p-quaterphenylene-alt-fluorene).