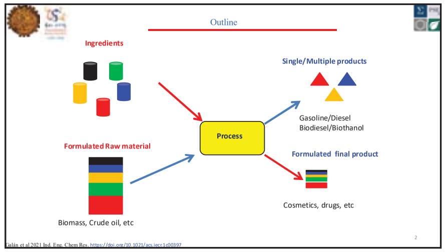
VALORIZACIÓN de RESIDUOS, BIOECONOMÍA y ECONOMÍA CIRCULAR

# Ingeniería de producto en biorrefinerías integradas.

Mariano Martín
Departamento de Ingeniería Química.
Universidad de Salamanca
28 Octubre 2021

1

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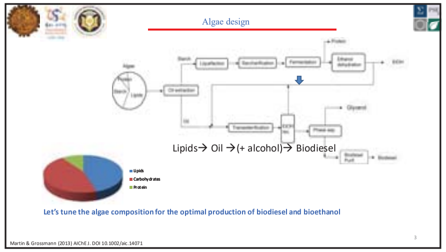


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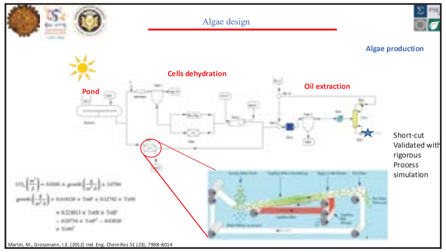


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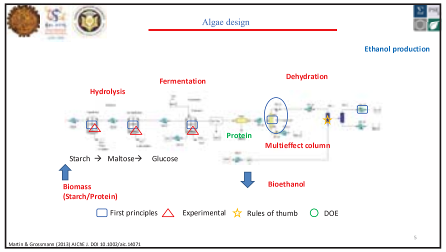


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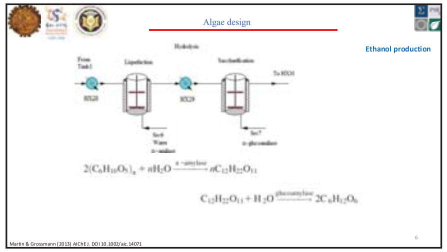


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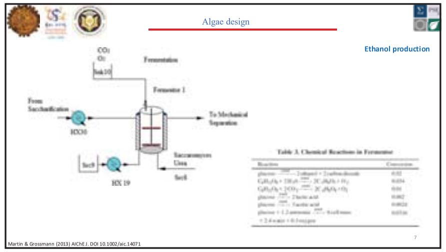


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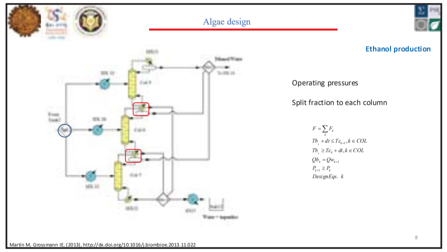


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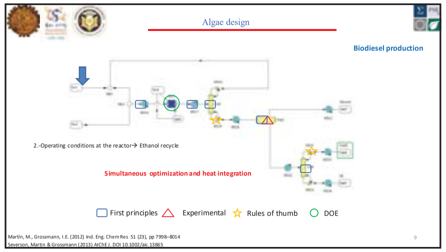


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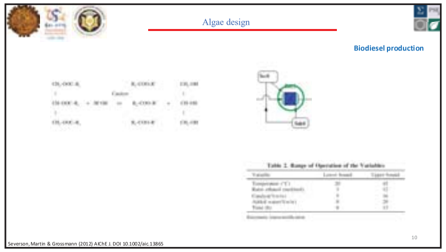


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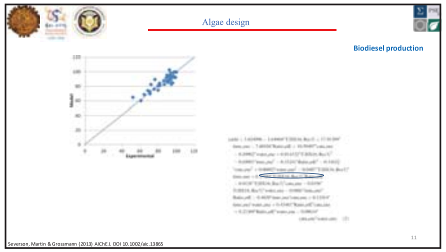


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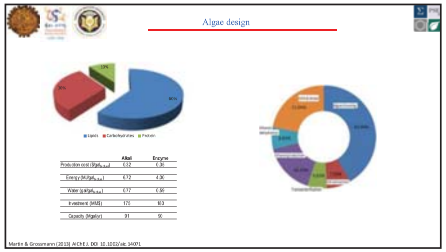


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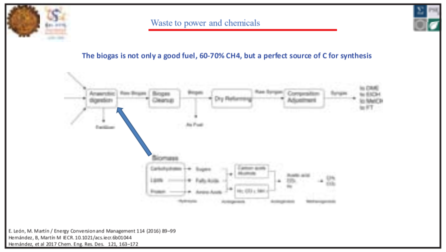


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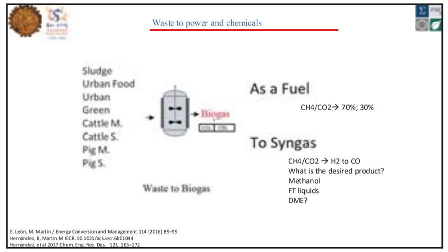


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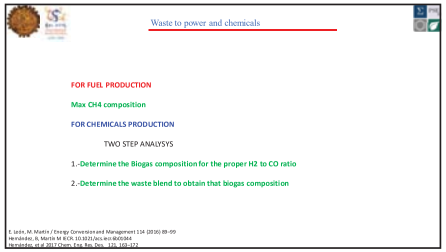


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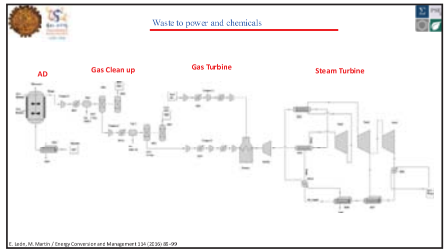


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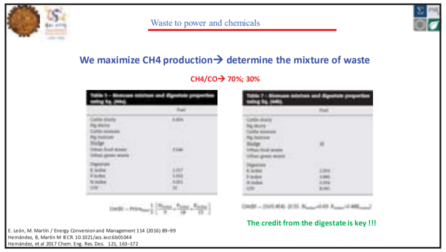


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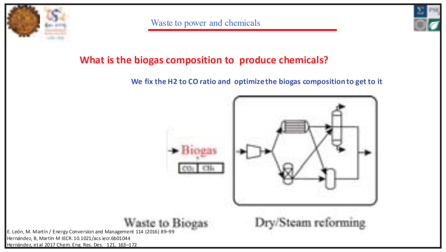


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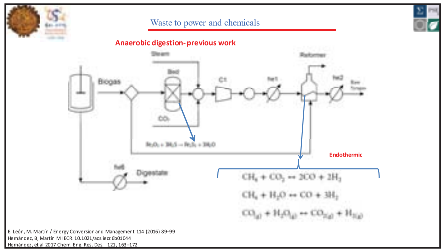


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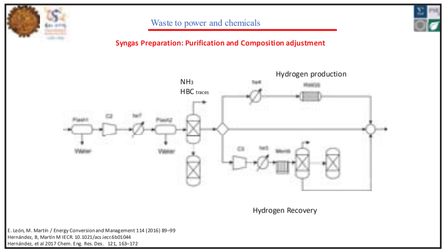


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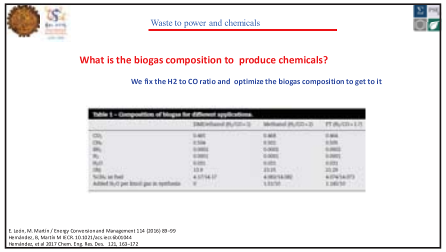


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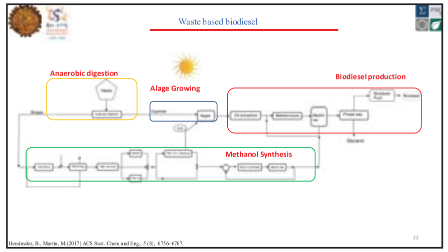


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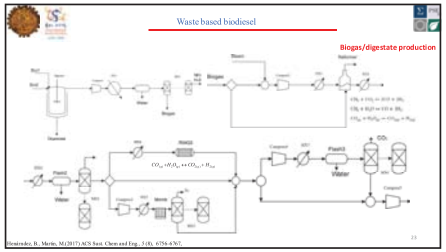


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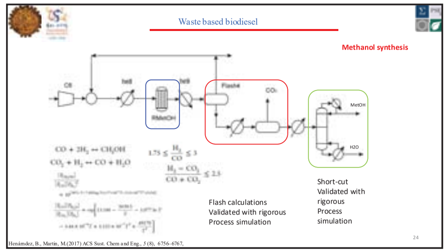


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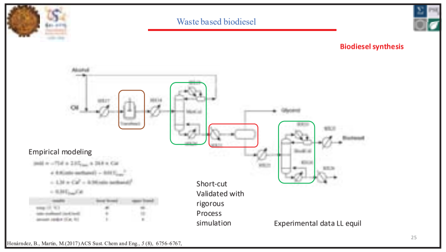


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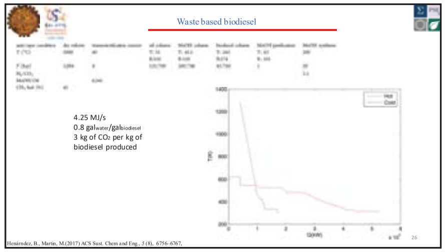


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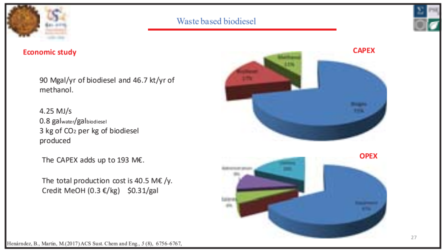


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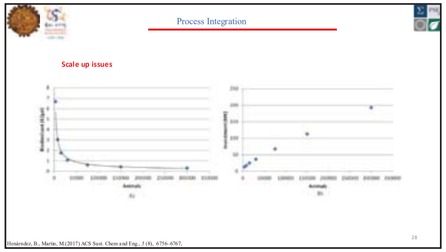


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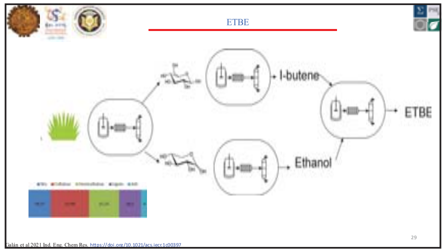


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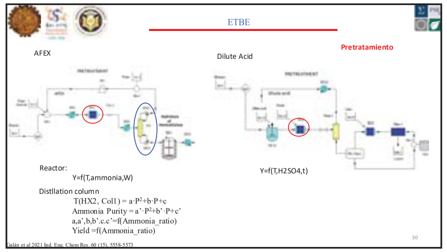


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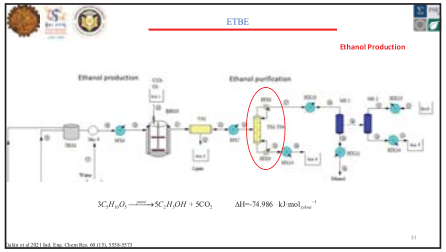


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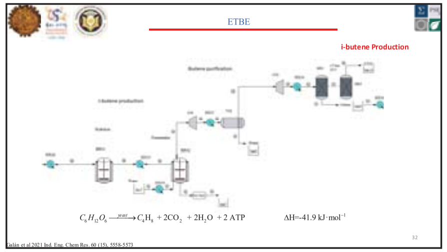


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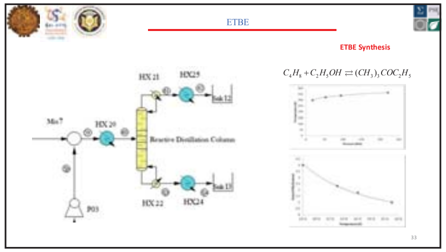


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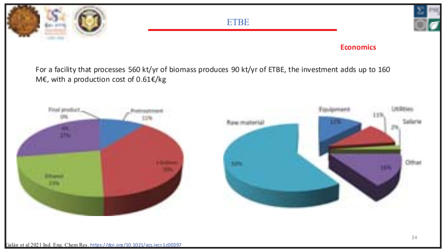


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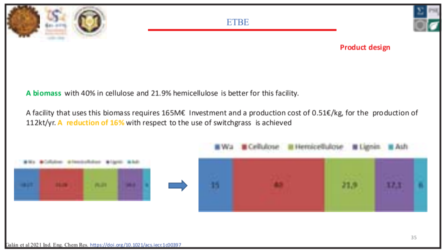


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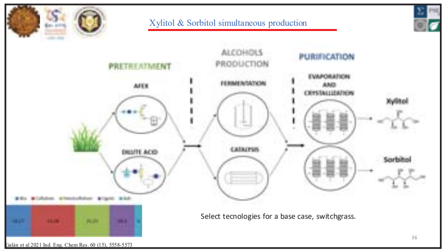


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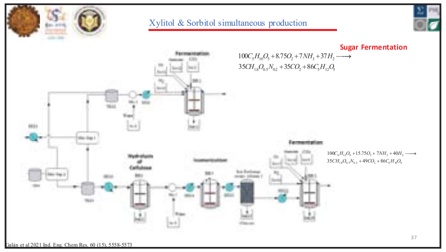


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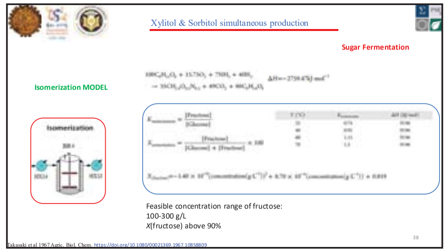


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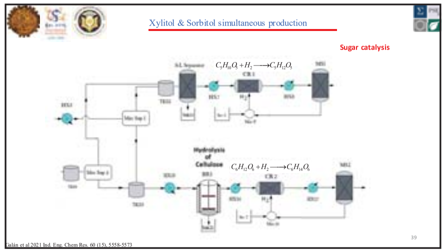


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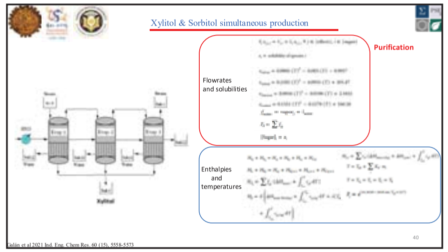


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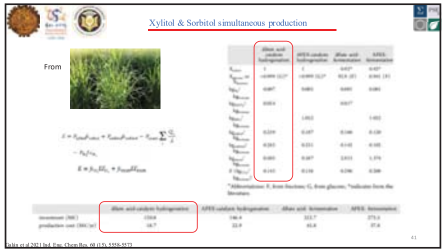


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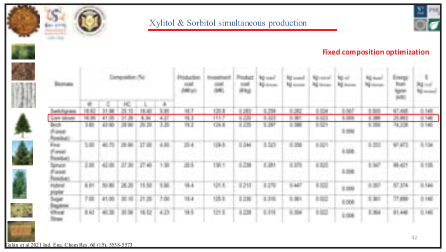


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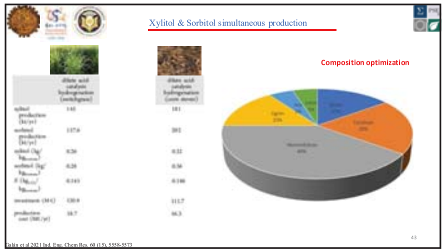


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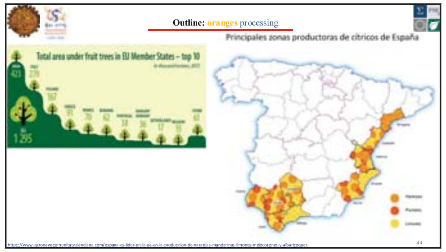


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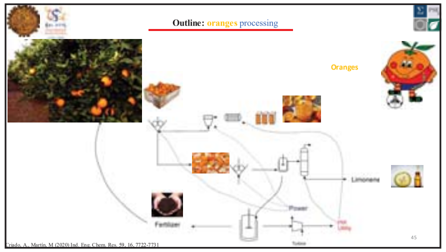


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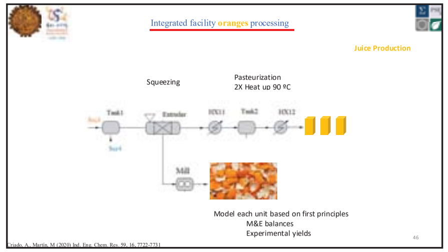


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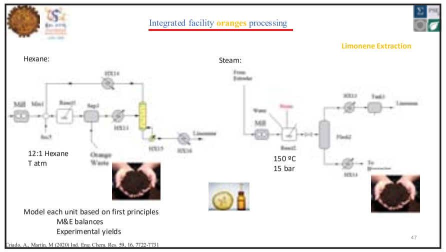


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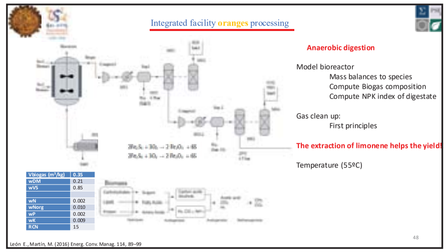


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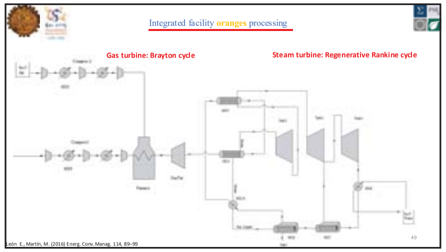


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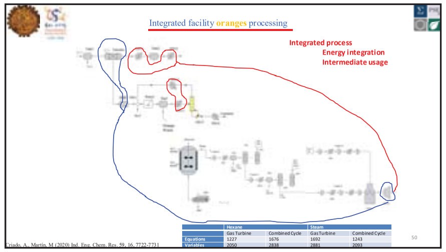
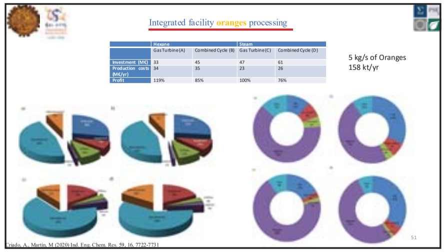


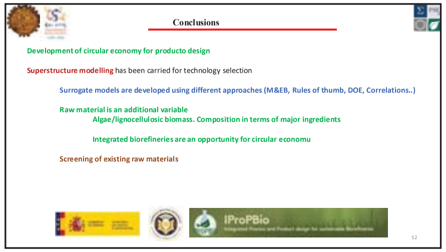

| | Hexane | | Steam | |
|---|---|---|---|---|
| | Gas Turbine | Combined Cycle | Gas Turbine | Combined Cycle |
| Equations | 1227 | 1676 | 1692 | 1243 |
| Variables | 2050 | 2838 | 2881 | 2093 |

50




| | Hexane | | Steam | |
|---|---|---|---|---|
| | Gas Turbine (A) | Combined Cycle (B) | Gas Turbine (C) | Combined Cycle (D) |
| Investment (M€) | 33 | 45 | 47 | 61 |
| Production costs (M€/yr) | 34 | 35 | 23 | 26 |
| Profit | 119% | 85% | 100% | 76% |

51




52

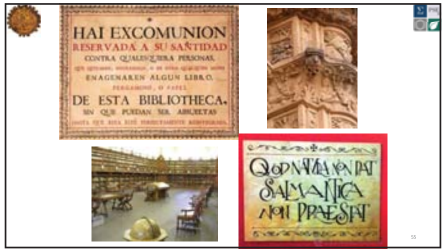





53

| Year | University | Location | |
|---|---|---|---|
| | | Original | Current |
| 1088 (charter granted 1158) | University of Bologna | Kingdom of Italy, Holy Roman Empire | Bologna, Italy |
| 1096–1167 (charter granted in 1248) | University of Oxford | Kingdom of England | Oxford, United Kingdom |
| 1134 (charter granted in 1218) | University of Salamanca | Kingdom of León | Salamanca, Spain |
| 1209 (charter granted in 1231) | University of Cambridge | Kingdom of England | Cambridge, United Kingdom |

54

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56

57


Conclusions

58

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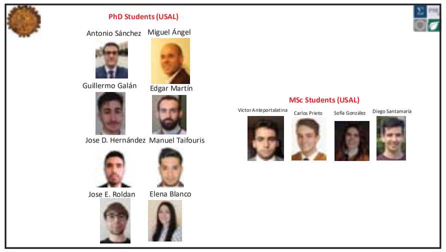
PhD Students (USAL)
Antonio Sánchez
Miguel Ángel
Guillermo Galán
Edgar Martín
Jose D. Hernández
Manuel Taifouris
Jose E. Roldan
Elena Blanco
MSc Students (USAL)
Victor Anteportalatina
Carlos Prieto
Sofía González
Diego Santamaría

59

60