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Deliverable D4.2 Proof of concept for optical process control

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PU	Public
PP	Restricted to other programme participants (including the Commission Services)
RE	Restricted to a group specified by the consortium (including the Commission Services)
CO	Confidential, only for members of the consortium (including the Commission Services)

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Due to IPR restrictions the Kestcells Consortium only can make public the executive summary of this Deliverable

Executive Summary

Deliverable 4.2 describes a proof of concept for in situ process control. Annealing is an important step in czts absorber fabrication but presence of secondary phases usually occur. Absorbers with different composition were characterized with SEM, XRF and Reflection. Reflection spectra were compared with spectra of CuS and ZnS. Spectra were simulated and the influence of CuS and ZnS on reflection spectra of czts absorbers was demonstrated. A reflection setup was designed and built around a vacuum chamber with heating capabilities. The in situ spectra resembled with spectra obtained ex situ. Temperature dependent reflection spectra were obtained for CuS and ZnS. Structural changes could be concluded from XRD characterization. These changes can be observed from in situ reflection spectra and were confirmed by simulation.