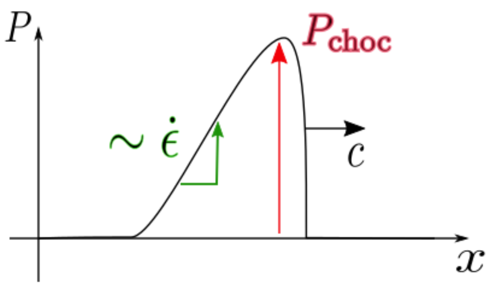
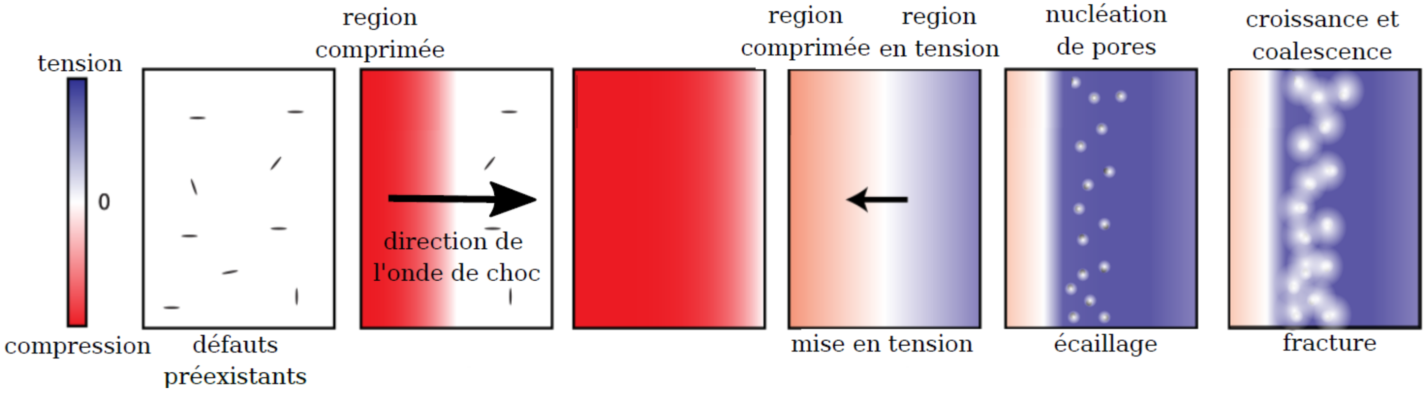
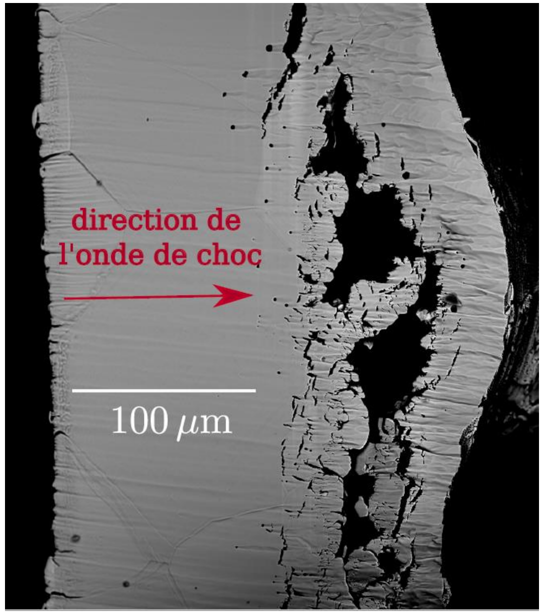
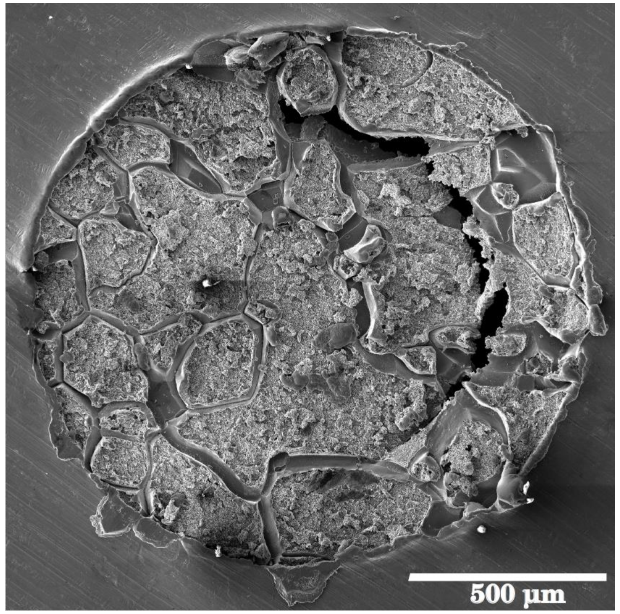
ENDOMMAGEMENT DUCTILE SOUS CHOC : L'ÉCAILLAGE



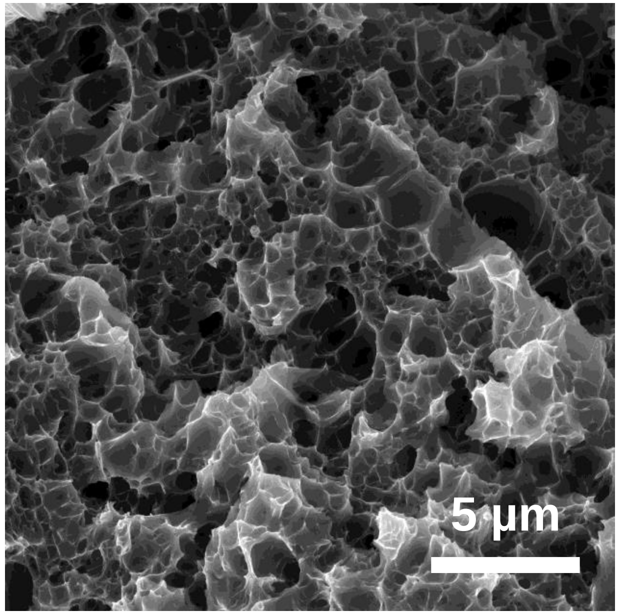




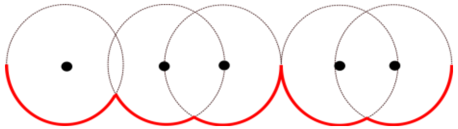
Polycristal d'étain, impact laser
Image MEB de Joëlle Bontaz-Carion



Surface écaillée d'aluminium, impact laser



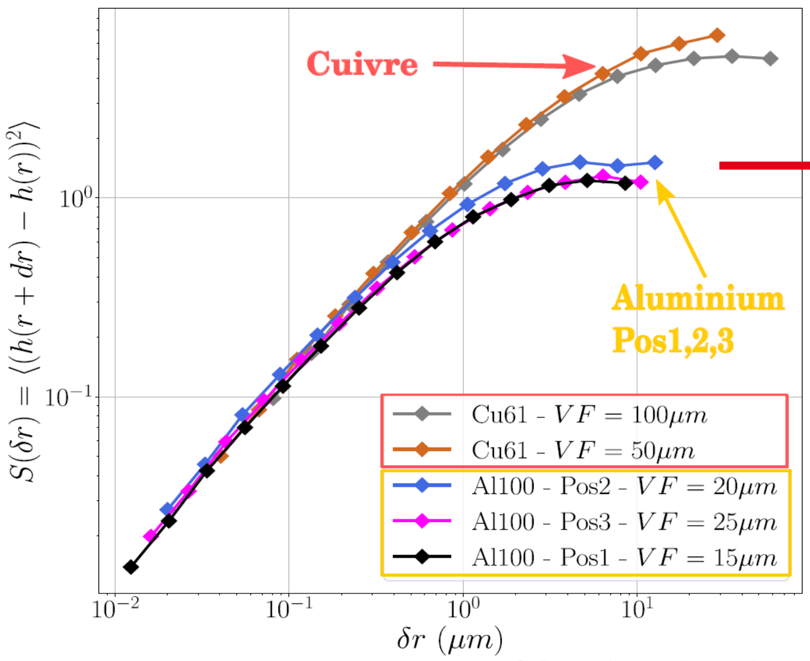
Surface écaillée d'aluminium, impact laser

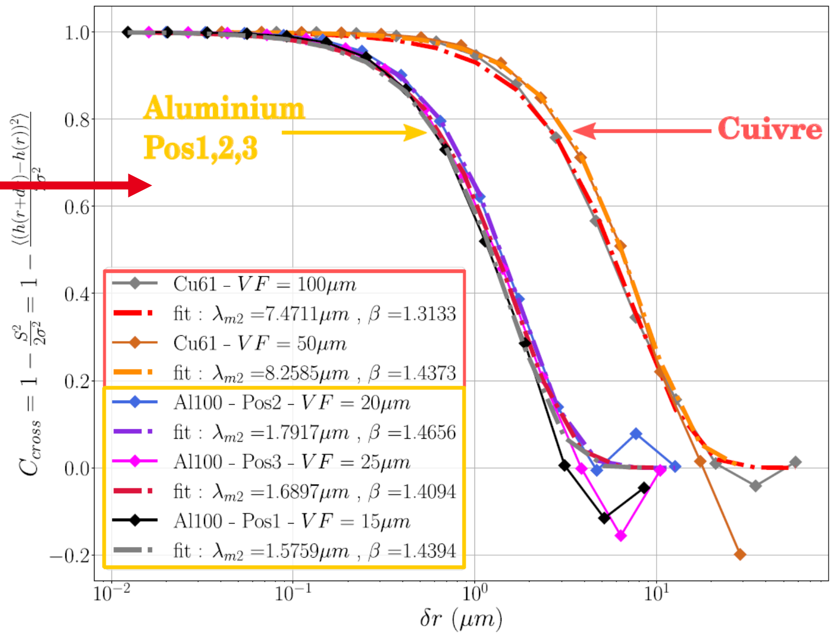


Taille des cupules en fonction du chargement ?

Effets collectifs des pores lors de leur phase de croissance/nucléation ?

ANALYSE STATISTIQUE DES SURFACES ÉCAILLÉS : $P_{\Delta r}(\Delta h)$

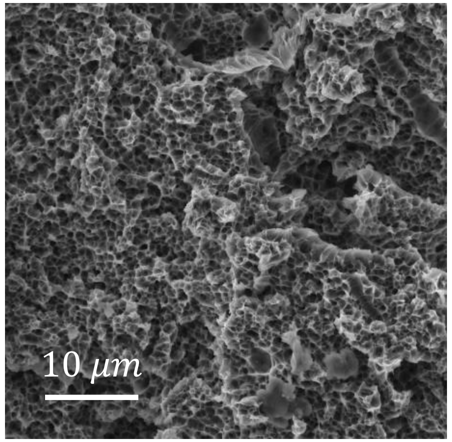


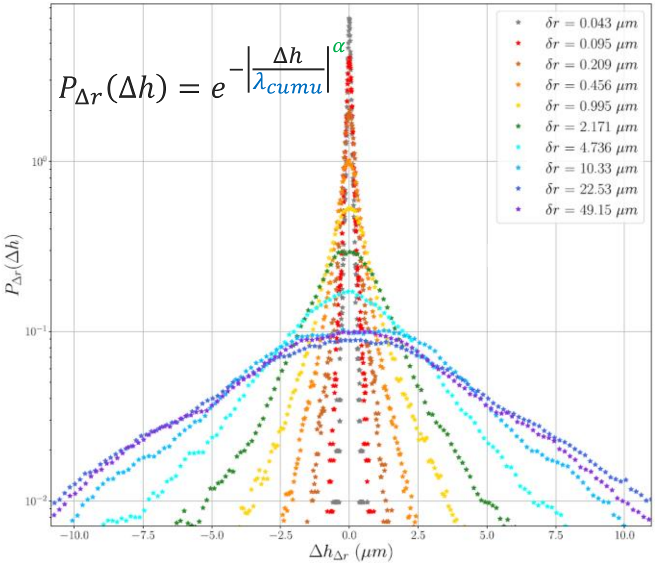


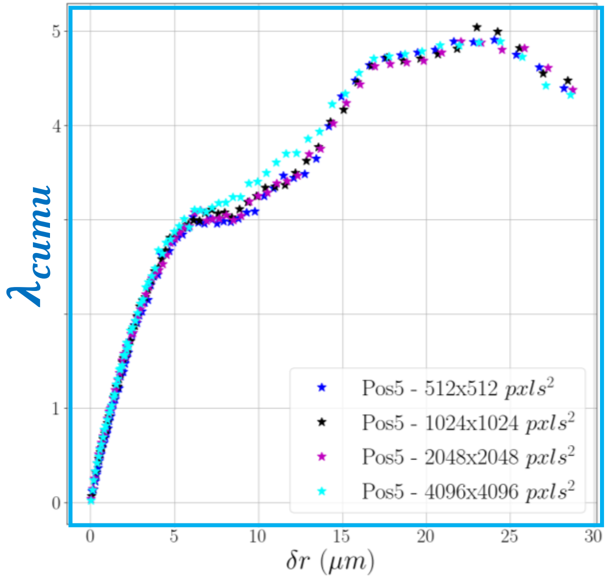
$$S(\delta r) = \sqrt{m_2(P_{\delta r}(\Delta h))} = \sqrt{\left\langle \left(h(r+\delta r) - h(r)\right)^2 \right\rangle_r}$$

$$C_{cross}(\delta r) = 1 - \frac{S^2(\delta r)}{2\sigma^2} \approx e^{-\left(\frac{\delta r}{\lambda_{m2}}\right)^{\beta}}$$

$$\begin{cases} \lambda_{Al} = 1{,}6\ \mu m \\ \lambda_{Cu} = 7{,}5\ \mu m \end{cases}$$







- **Séparation d'échelles** entre une macroscopique liée à l'organisation des pores dans l'espace, l'autre microscopique liée à la distance inter-cupules ou à la taille des cupules.
- La robustesse des outils d'analyse a été testée sur des **microstructures ad hoc**.