## Simulation of Failure of AIN Specimens



Grain size:  $d_a = 10 \ \mu m$ 

Specimen size range:

 $D = L = 50, 100, 200, 400, 800 \ \mu \text{m}$   $b = 10 \ \mu m$ 

Calculation of average stress:

$$\bar{\boldsymbol{\sigma}}^{k} = \frac{1}{V_{k}} \sum_{p=1}^{n_{k}} \boldsymbol{t}^{p} \otimes (\boldsymbol{x}^{cp} - \boldsymbol{x}^{k}) A_{p} \quad \sigma_{a} = \frac{1}{V} \sum_{k=1}^{N} V_{k} \bar{\sigma}_{11}^{k}$$

$$\downarrow \text{lations}$$
el
$$\begin{bmatrix} 150 & 14 \\ 140 & 12 \\ 130 & 12 \\ 120 & 10 \end{bmatrix} \quad \Box \text{ Simulations}$$

$$\begin{bmatrix} 14 \\ 12 \\ 10 \\ 10 \end{bmatrix} \quad \Box \text{ Model}$$

 $\delta_{\sigma_N}$  [MPa]

2

0

501

[η ττητ] Ν.

800

 $\begin{aligned} \dot{\epsilon} &= 1/\mathrm{s} \\ \dot{\epsilon} &= 1000/\mathrm{s} \end{aligned}$ 



150

140