

Phase Transformations of Materials

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Brno, PS



Phase Transformations in
Steels: Diffusionless...
(Hardcover)

by Elena Pereloma, David
V Edmonds

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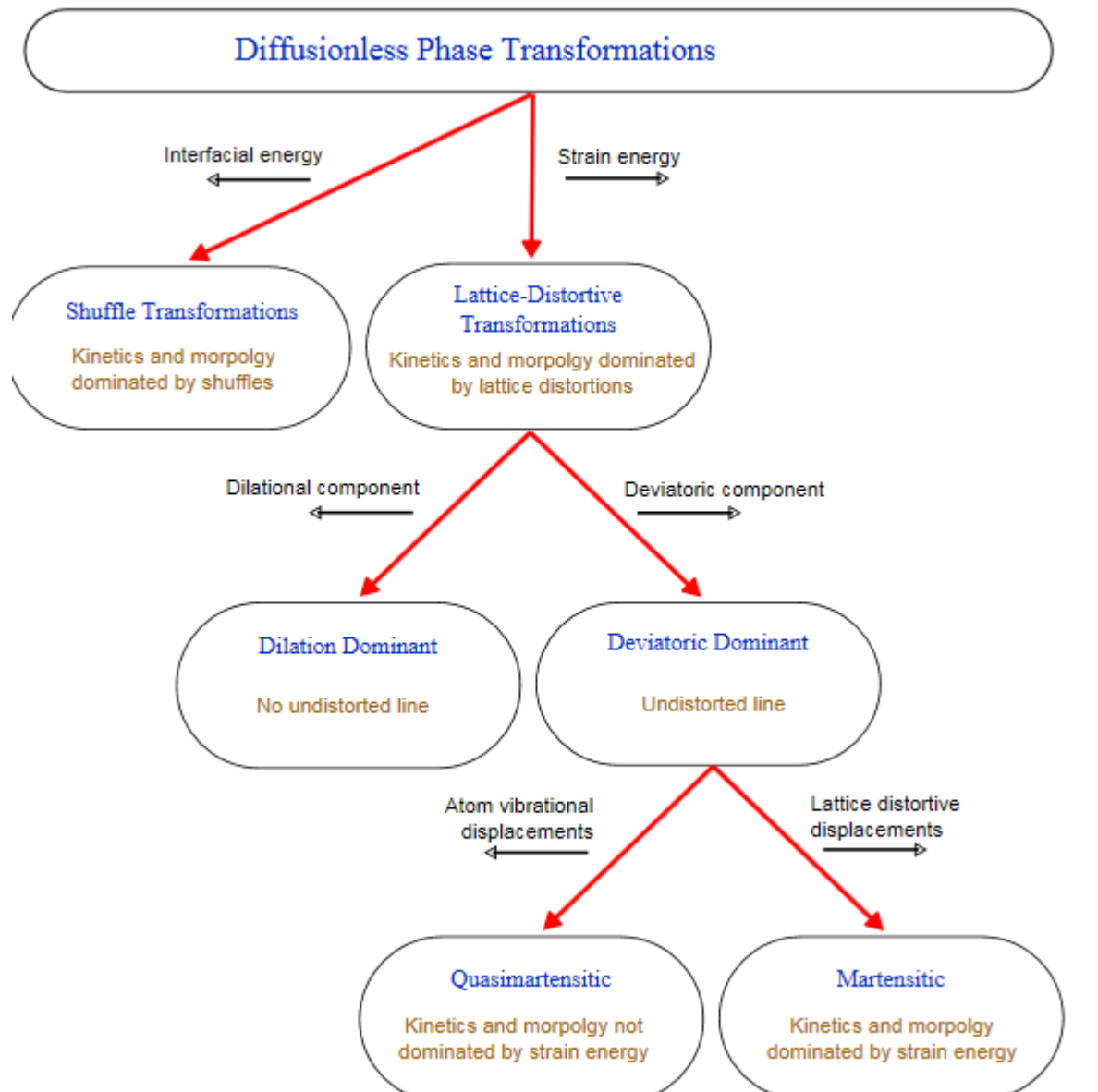
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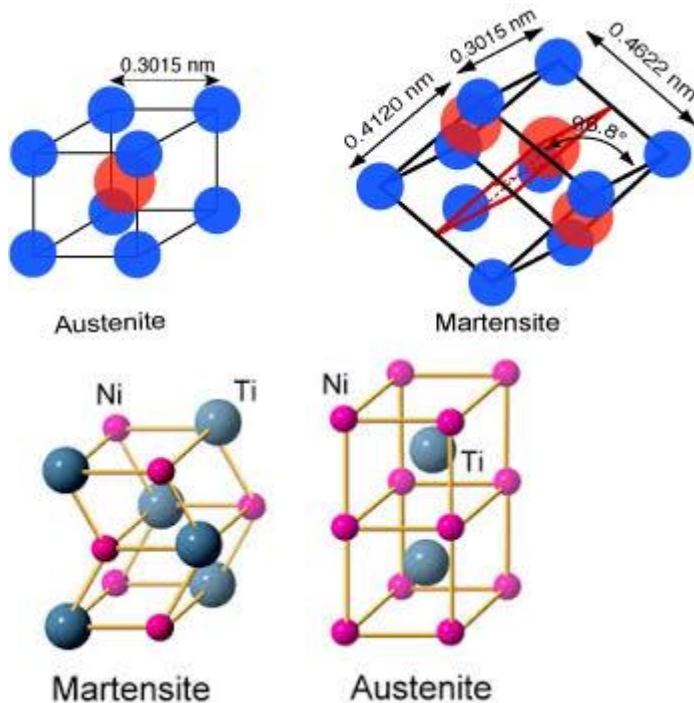
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Materiály s tvarovou pamětí

SMA:Shape memory alloy. .



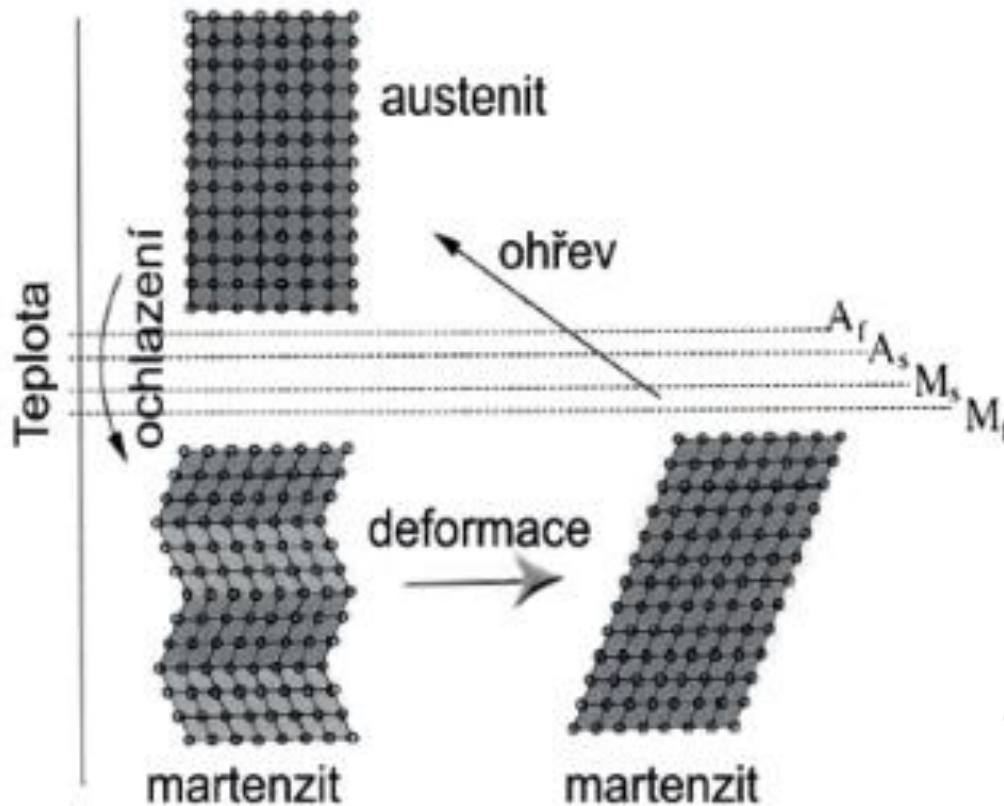
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Tvarová paměť byla poprvé sledována u mosazi v roce 1939, od 60. let zájem o tuto oblast stoupá. V roce 1962 byla zkoumána ekviatomární slitina **Ni** a **Ti**, u níž byla objevená mimořádně výrazná tvarová paměť. K tomuto objevu dospěl [William J. Buehler](#) z **Naval Ordnance Laboratory** ve White Oak v Marylandu, USA. Podle složení a místa vzniku se tato slitina nazývá **NITINOL**. Mezi další materiály s tvarovou pamětí patří keramické materiály jako je oxid zirkoničitý (ZrO_2), oxid hořečnatý (MgO), oxid ceričitý (CeO_2), dále také [polyuretany](#) a některé kovové slitiny jako například měď-hliník-nikl, měď-zinek-hliník, železo-mangan-křemík.

Deformace materiálu s tvarovou pamětí

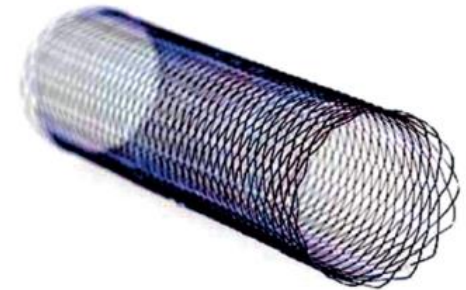
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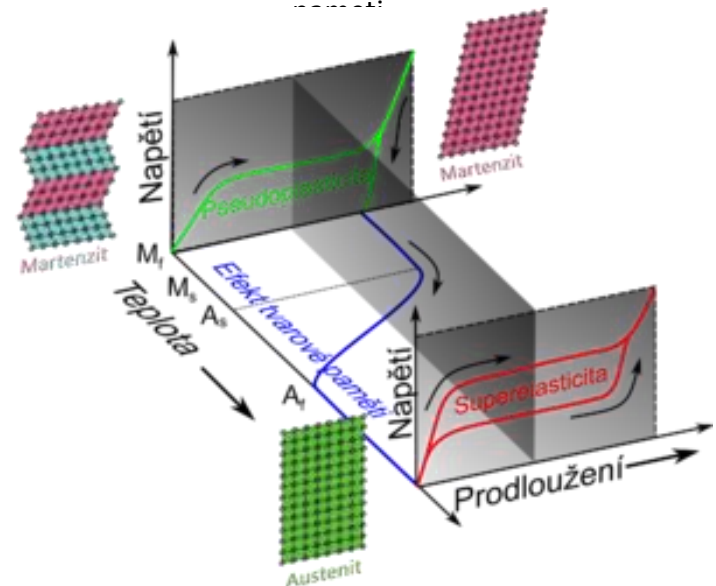
Obr. 4 Schéma martenzitzické transformace SMA materiálů

3 Cu . Al, 3 Cu . Zn (běžná mosaz, tvarová paměť se objevuje až v nízkých teplotách), Cu-Al-Ni, Cu-Al-Mn, Ni-Ti-Cu, Ni-Ti-Hf a mnoho dalších. Existuje celá řada dalších kovů, u kterých se tento jev vyskytuje, ale ty nejsou moc využívány, protože mají jen slabý efekt nebo jsou nestabilní. Všechny tyto slitiny patří do skupiny **intermetalik**,



Obr. 1 Pletený stent

<https://www.engineering.sk/strojarstvo-extra/2742-kovove-materialy-s-tvarovou-pameti>



Discussion

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