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Adrian

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:

: Prof. Adrian Gerlich

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5.1

HAZ

5.2

5.3

Digital Image Correlation

DIC

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COD

[19]

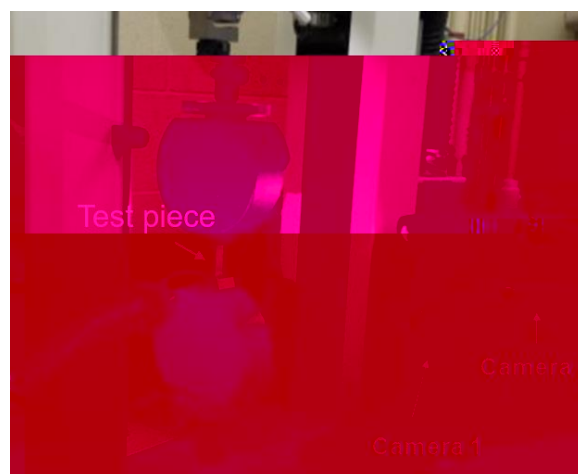
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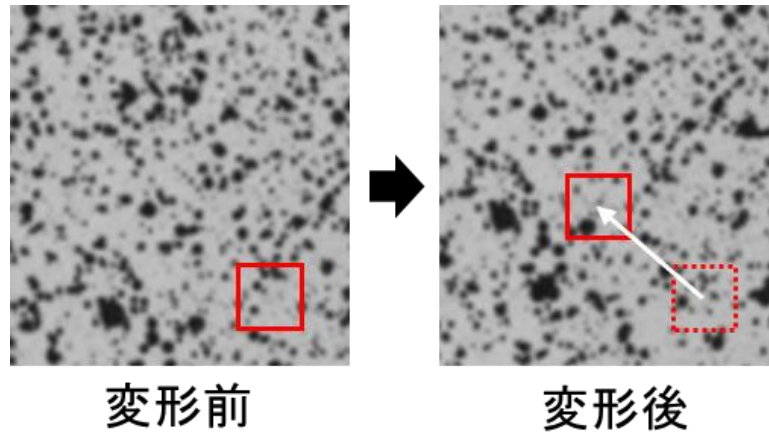
Fig. 5.1

20×20

Fig.

5.2





5.4

780MPa
Table 5.1 5.2

HT780

TG-S50
Table. 5.3

6 kW
1.6×11 mm

m/min 0.3m/min 2

0.5
Fig. 5.3

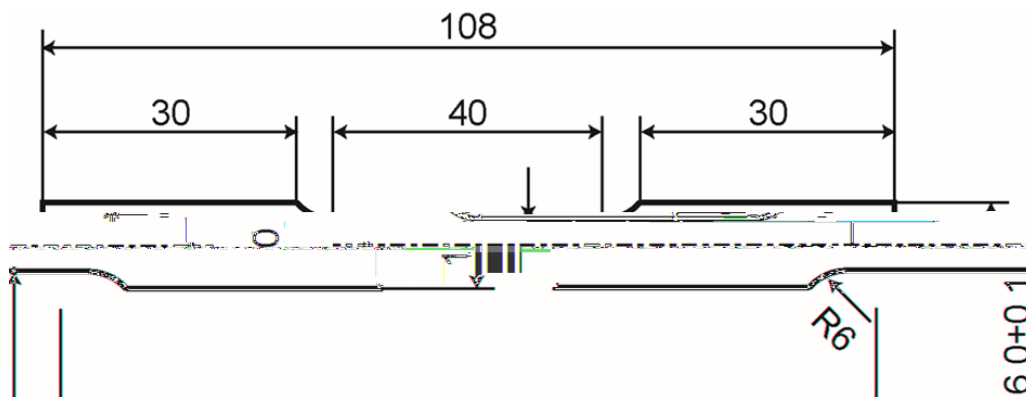
Table. 5.1 Chemical composition of HT780.

Material	Chemical composition, mass%													
	C	Si	Mn	P	S	Cu	Ni	Cr	Nb	V	Ti	N	B	SoIAI
HT780	0.14	0.25	1.32	0.0011	0.004	0.01	0.02	0.25	0.002	0.002	0.01	0.0022	0.001	0.03

Table. 5.1 Chemical composition of TG-S50

Material	Chemical composition, mass%						
	C	Si	Mn	P	S	Cu	Cr
TG-S50	0.14	0.25	1.32	0.0011	0.004	0.01	0.02

Welding speed, m/min		0.3, 0.5	
ser type	LD		La
power, kW	6		Laser
tilation angle, deg	5		Laser-irra
s length, mm	10		Defectu
er core, μm	400		Lase
ocus lens	f400		Ro
rogenizer	LL6		Hor
t size, mm	1.6 \times 1		Spe
ng width, mm	0.62		Weavin
frequency, Hz	15		Weaving
ng speed, m/min	12.7		Wire-feed
e current, A	180		Wire
ng position, mm	0		Wire-feed
ding angle, deg	70		Wire-fee
shielding, l/min	10		Ar-gas-s
er distance, mm	18		Energizat



5.5

5.5.1 0.3 m/min

0.3 m/min

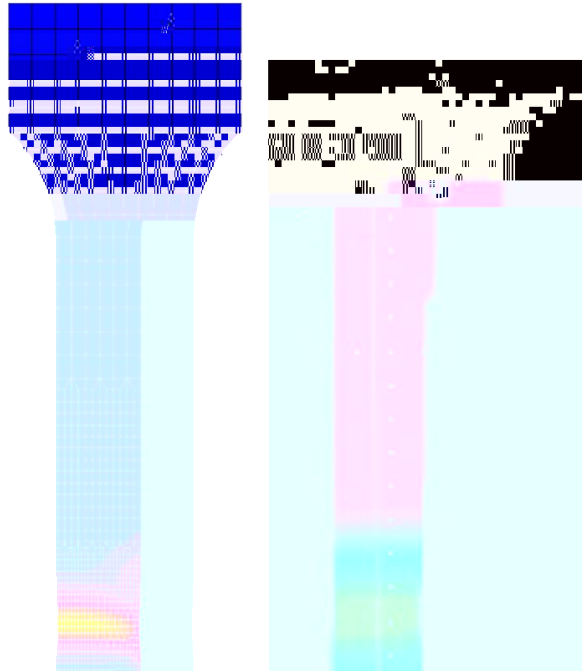
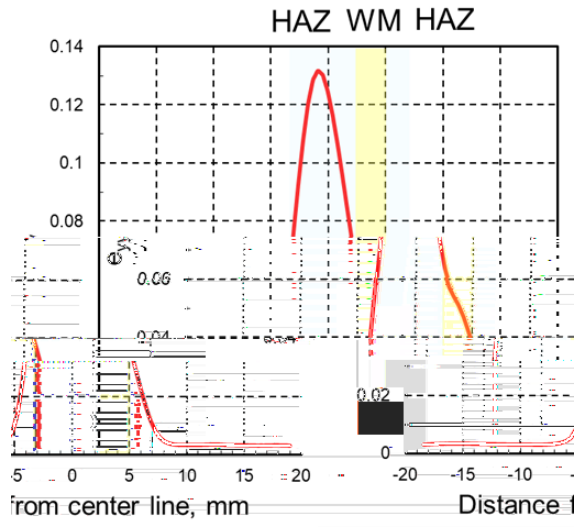
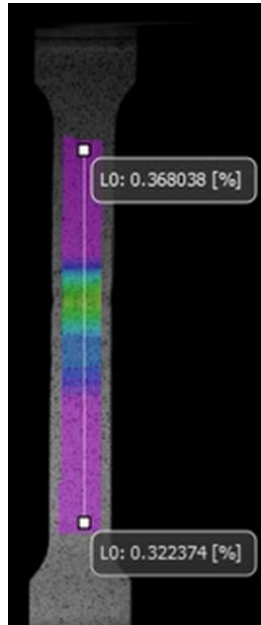
DIC

Fig.5.4

Fig. 5.4

5 mm

Fig. 5.5



5.5.2 **0.5 m/min**

0.5 m/min

Fig.5.4

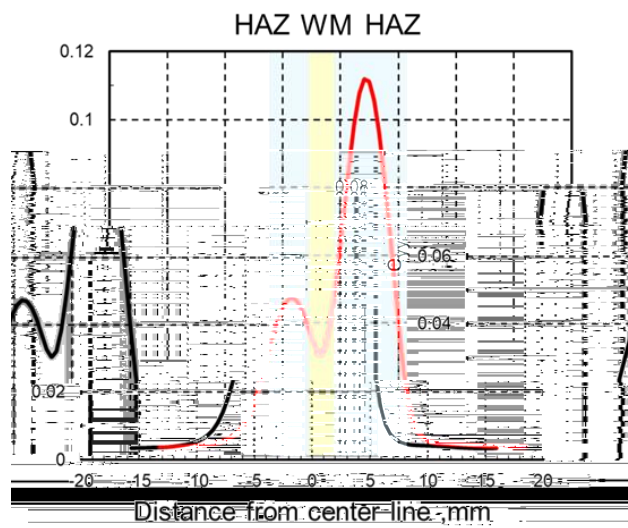
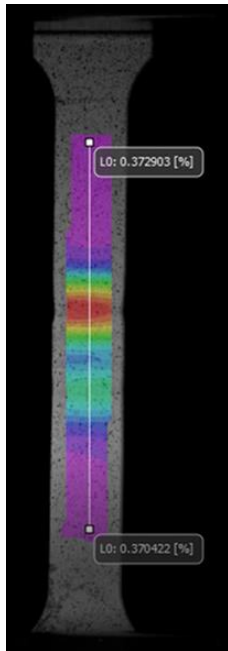
Fig. 5.6

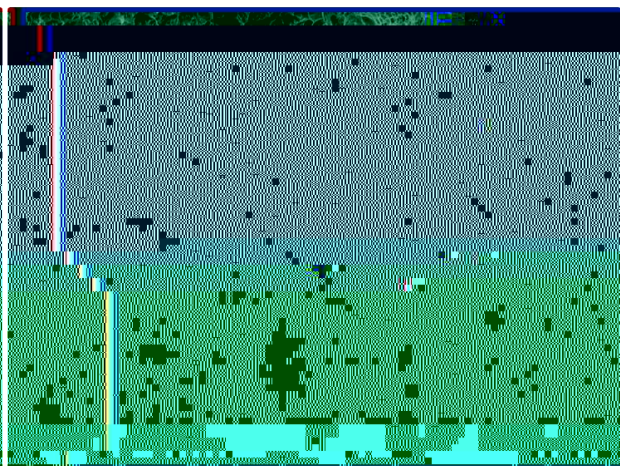
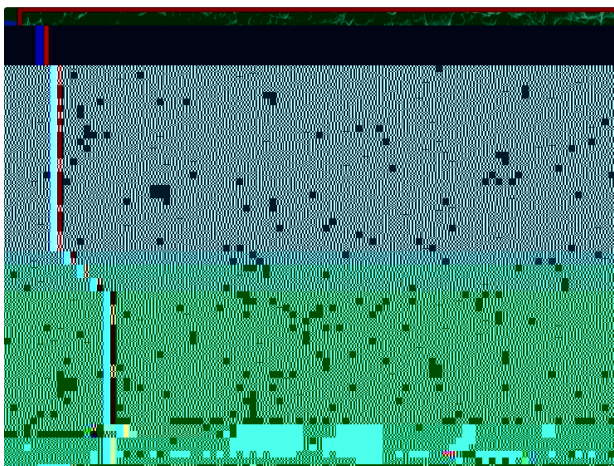
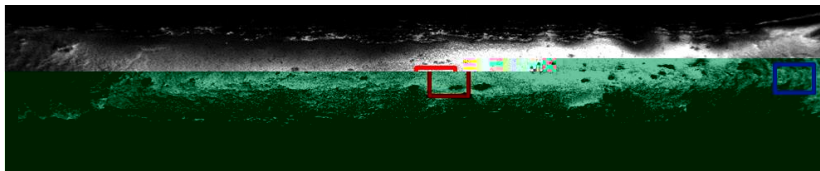
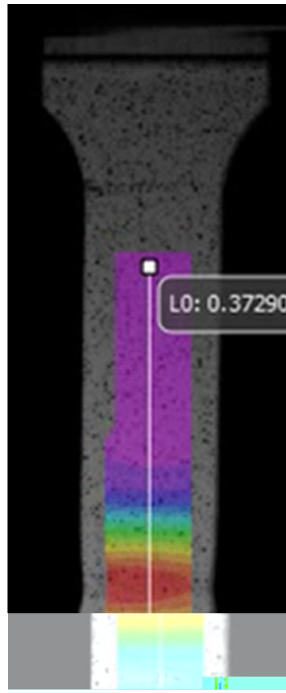
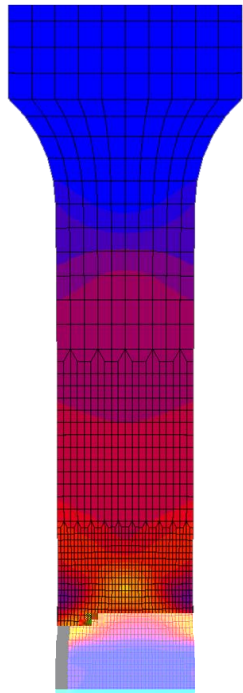
5 mm

Fig. 5.7

0.3 m/min

Fig.5.9





6.

1

7.

Adrian Gerlich

CAMJ
