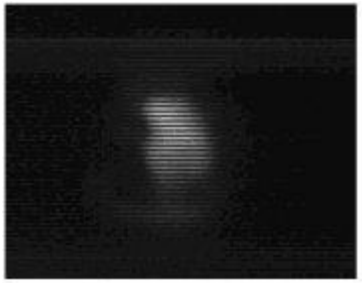
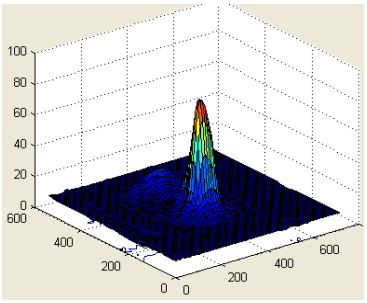
Measurement information security when using mechanoluminescent sensor elements with distributed sensitivity in aerospace engineering





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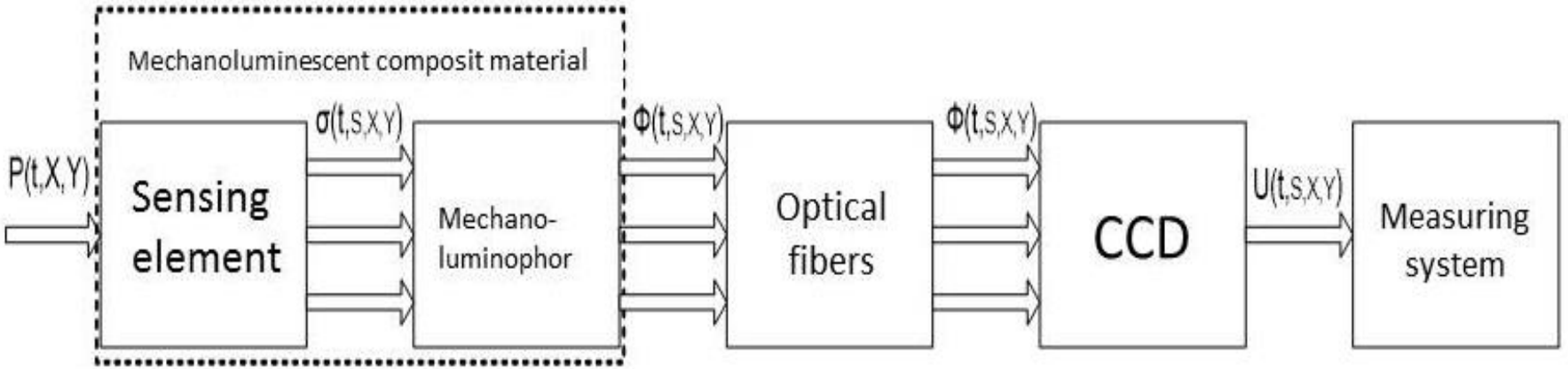
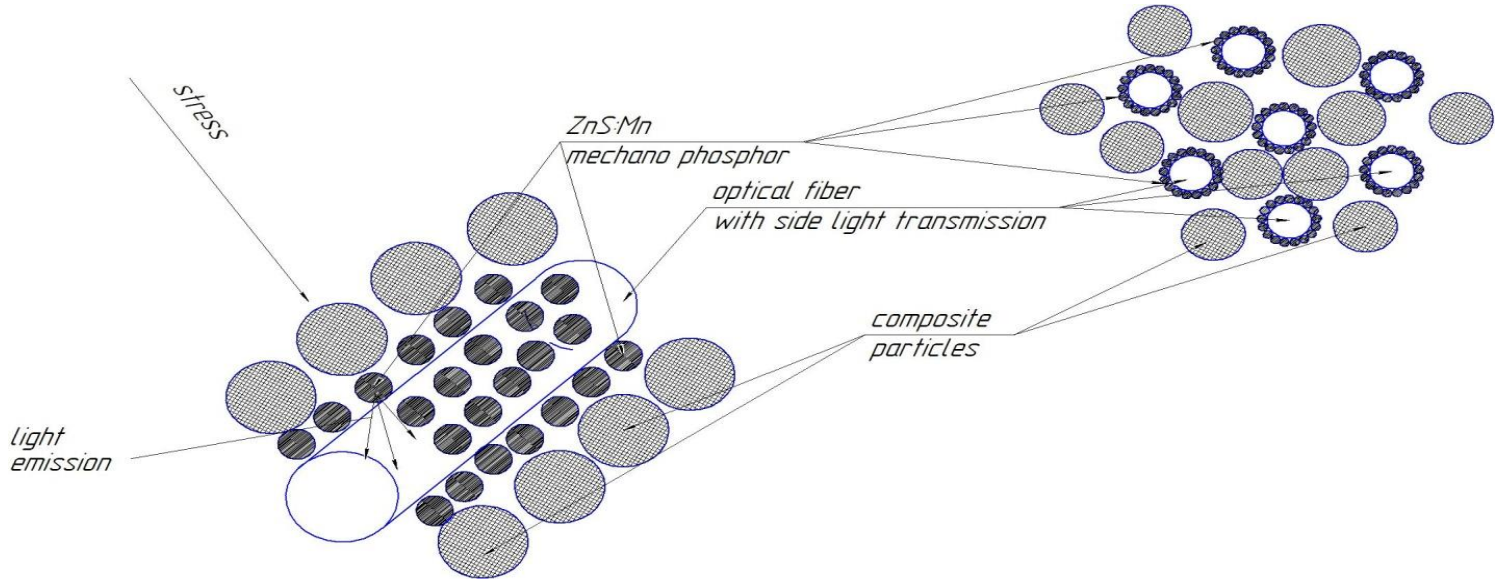
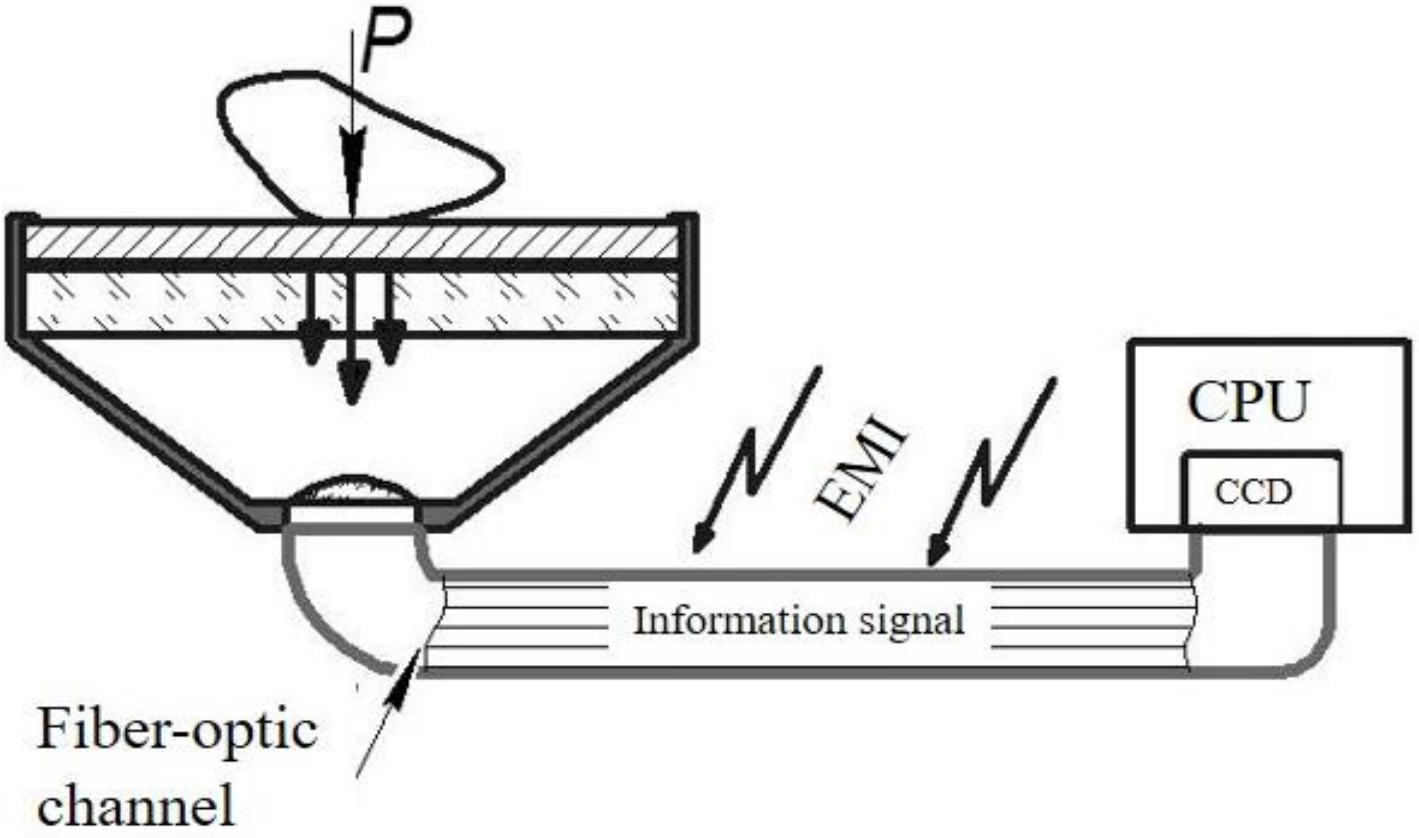
Block diagram of a measuring device with a tactile mechanoluminescent pulse pressure sensor.



The implementation of mechanophosphor optical fiber with lengthwise light input into the optical waveguides in the composition of the composite material



Transmission of an optical measuring signal through a fiber-optic bundle



Comparison of characteristics of information transmission channels

Parameter	Data channel		
	Twisted pair (UTP, FTP)	Coaxial cable	Optical fiber
Information capacity	100 MBit/s	100 MBit/s	0.8…3.2 TBit/s
Error rate	10-10	10-10	10-12
Loss, dB/km	3	2	less 0.2
Regeneration distance, km	1	5	100…200
Crosstalk	high	low	no
Noise sensitivity	high	middle	low
Weight and size	high	high	low
Cost	low	middle	middle