

## 273.

<b>Organization</b>	Technical University of Moldova
<b>Patent / patent application title</b>	<b>LENS WITH GRADUATED REFRACTIVE INDEX</b>
<b>Authors</b>	DINUTURCANU, PAVEL NISTIRIUC
<b>Patent / patent application N°</b>	<ol style="list-style-type: none"> <li>1. <b>Brevet of invention MD no. 2200 GO2B5</b></li> <li>2. <b>Brevet of invention MD no. 2434 GO2</b></li> <li>3. <b>Brevet of invention MD no. 2566 GO2</b></li> </ol>
<b>Description</b>	<p>Lentilele cilindrice destinate pentru filtrarea si restructurarea distantei focale sunt produse in baza fluidului magnetoreologic din praf (Y3Fe5O12) si ulei de polietilsiloxan, care constituie miezul lentilei si este amplasat intr-un tub din masa plastica. Sistemul dispersiv in baza fluidului magnetoreologic permite mai simplu de a restructura parametrii si caracteristicile lentilei. Lentila cilindrica este plasata coaxial in interiorul unui sir de bobine de inductanta amplasate consecutiv de a lungul ei. In procesul de magnetizare valoarea indicelui de refractie a miezului lentilei se reduce proportional patratului razei, adica obtinem lentila cu indicele de refractie gradat parabolic. Are avantajele: îmbunatatirea caracteristicilor si indeplinirea de noi operatiuni de filtrare a semnalelor optice; restructurarea lenta si fina a distantei focale intr-o gama de pana la 3.0 mm; Efectuarea concomitenta atat a operatiunilor de filtrare, cat si de restructurare fina a distantei focale; permite sporirea stabilitatii semnalului digital la receptie si majorarea calitatii de deservire QoS in retele de comunicatii optice.</p> <p>Cylindrical lens designed for focal distance filtering and restructuring are produced on the basis of magnetoreological fluid from dust (Y3Fe5O12) and polyethylsiloxane oil, which is the core of the lens and it is placed in a plastic tube. Dispersing system based on magnetoreological fluid makes it easier to restructure the lens's parameters and features. The cylindrical lens is coaxially placed inside a series of inductance coils placed consecutively along it. In the process of magnetization the refractive index value of the lens core is reduced proportionally to the square of the beam, that is, we obtain the lens with the parabolic graduated refractive index.</p>
<b>Domain</b>	Optical communications networks and optical information storage and processing systems