## New technology of water purification from oil



### Commercializing science Baky, October 15-18, 2007 Dr. Teimuraz Mechurchlishvili Tel.(995)877795339 E-mail: lopota2000@yahoo.com

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## New technology is a basis for its patenting and joint elaboration













3. By estimation of international experts, from mining to consumer 1-2% of mined oil is spilled



4.

- 1985-1990 Theoretical investigation on moving waterair boundary in adsorptiondesorption nanosystems.
- 1990- New method and the machinery of film flotation.
- 1990-2007 Pilot plants for purification of water and ground from oil in Tbilisi, Batumi, `` Erika``(France), Venice (Italia)



## <u>5.</u> Description of technology:

- preparation of material.
- Water cleaning on movable, twodimensional thin films at pneumatic flotation machine





## <u>6. Technological</u> advantages:

- Use of non-equilibrium nanosystem of film water-air layer.

- Low consumption of electric power: Plant of 20 m3/h productivity needs 25 kW/h power

- Low cost price: \$ - 1,2/1000 gallons Existing \$ - 3,5/1000 gallons.

Low cost of plants with regard to 20-40 m3/h productivity: in the range of 30 000- 50 000\$
Small number of personnel – 3 persons



# 7.Experimental results:

Results of pilot testing of film flotation, performed in Italy:

• productivity 2.0 M<sup>3</sup>/h

- oil in sea-water of 32000 ppm content.
- oil in purified water –
   48 ppm.
   purification degree –
   99,85%



Taverna, Milaneze LTD, Italia



8.
Work passed a pilot testing (second stage of US EPA).

 A number of patents are known, among which are: US7169301and US20050115881



#### Taverna, Milaneze LTD, ITALIA



9.

An invention is necessary for all oil-mining, refining and consuming countries for purification of sediments of ports, terminals, as well as of reservoirs of tankers and oilstorages.





## 10. Our competing firms are:

- Shell
- B.P.
- Amoco Petrolium,
- DoE Demo,
- Biogenesis and etc.



Batumi oil termina Georgia

## 11. Competitive Matrix

Important product or technology characteristics	<u>My</u> instit. Oil, ppm, film flotation	<u>DOI Demo</u> oil, Filtration	<u>Amco petrol</u> eum Oil, Extraction+ sorbtion
Batumi oil terminal Georgia (Soil)	258		
,,Erika", France (Soil)	375		
Venecy, Italia (Sea water)	48		
usually cost	Water- \$ 1,2/ 1000 Gallons	Water- \$ 2,0 / 1000 Gallons	Water- \$3,0 / 1000 Gallons

# 12.We seek a partner for joint performance of the work and patenting.

### Cost by agreement





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