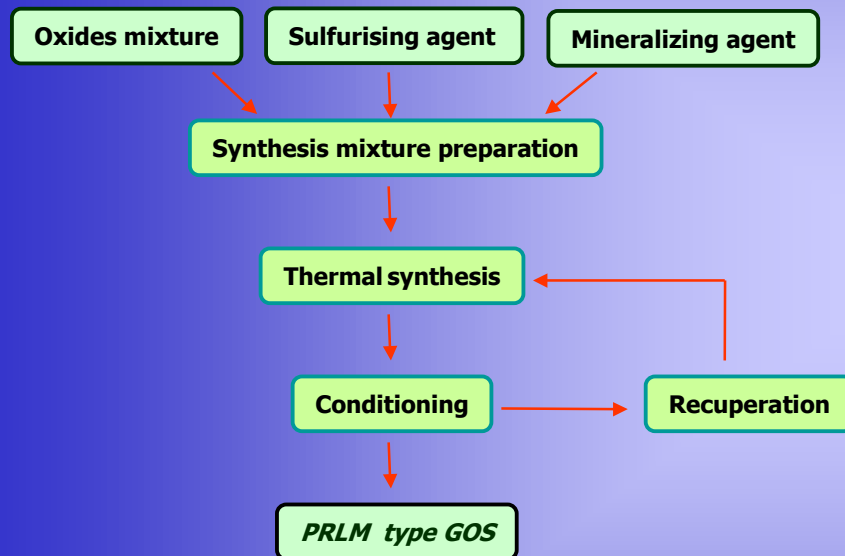


X-RAY INTENSIFYING SCREENS

MATNANTECH project 70 (2001-2004)

Project Director : dr. Elisabeth-Jeanne Popovici

Synthesis of PRLM type GOS

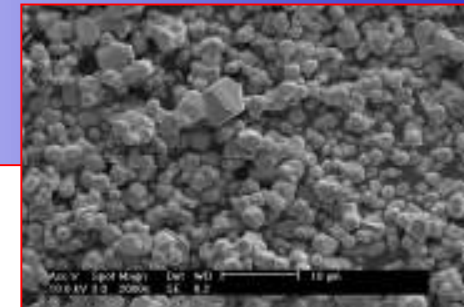
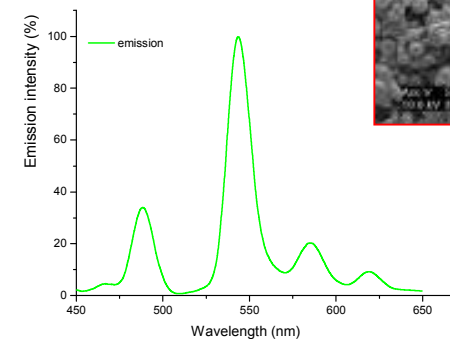


General characteristics of PRLM type GOS

- Fluid powder with composition $Gd_2O_2S:Tb$;
- Uniform particle size distribution ;
- Bright green luminescence under UV and X-ray excitation;
- Specific emission peak at 545 nm

Results

1. Technology for the manufacture of the roentgenoluminescent pigment based on terbium activated Gadolinium OxiSulfide (GOS type)
2. Roentgenoluminescent pigment: product *PRLM type GOS*;
3. Technology for the manufacture of X-ray intensifying screens - EIRX
4. Papers



MANUFACTURE OF X-RAY INTENSIFYING SCREENS

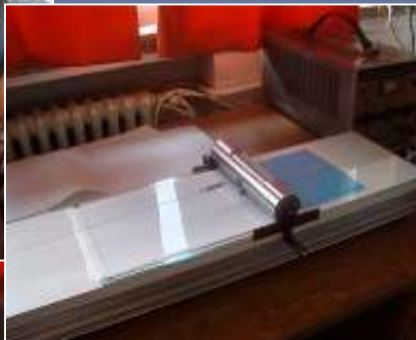
Specific application domain

Medical radiodiagnosis:

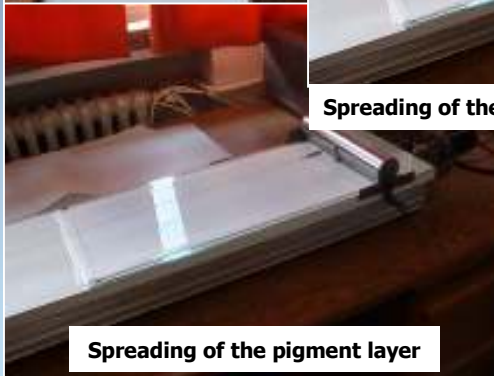
- the system EIRX- radiologic film - EIRX from radiological cassette helps that medical investigations are performed at diminished roentgen radiation doses



Substrate preparation



Spreading of the reflectorizing layer



Spreading of the pigment layer



General characteristics of EIRX

- sheets with green luminescence for radiological cassettes
- layered structure:
protection layer / pigment layer / reflectorising layer / substrate
- composition:
nitrolac / Gd₂O₂S:Tb / TiO₂ / PET
- thickness of 10 um / 300um / 20 um / 185um, respectively;
- packing density of 220 g PRLM/m²



Pair of EIRX under UV excitation



Introduction of EIRX inside the cassette



Radiographies performed using: EIRX (1,2), standard screen from the market (3) and no screen (4)

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