

# Tritiated dusts in tokamak: What to take away ...

Large set of dust properties including particles of **high chemical reactivity**

**Dust collection** needed during the ITER life

## 1. Dust Tritium inventory:

- **~10 GBq/g for W, unknown for Be**

## 2. Dust adhesion/aerosol creation:

- **Metallic dust** are covered by an **electrical insulating layer**
- **Metallic dust** are positively **charged**
- **Adhesion:**
  - In case of **isolated** particles, **tritiated dust adhesion** ↗ (due to  $F_{im}$ )
  - In case of aggregate, tritiated dust **adhesion remains unknown**

## 3. Tritium measurement in aerosol:

- Open issue due to limited  $\beta$  path in material
- Needs: **development of real-time diagnostic**

## 4. Toxicity Studies of W Tritiated dust :

- **no Cytotoxicity** observed (no lung cell toxicity)
  - **Genotoxicity induced**
- } Complementary studies needed  
(Be, inhalation on rodent)

## 5. Waste management:

- Needs: **development of an immobilization dust technique**  
(in hydraulic binder as proposed by CEA)