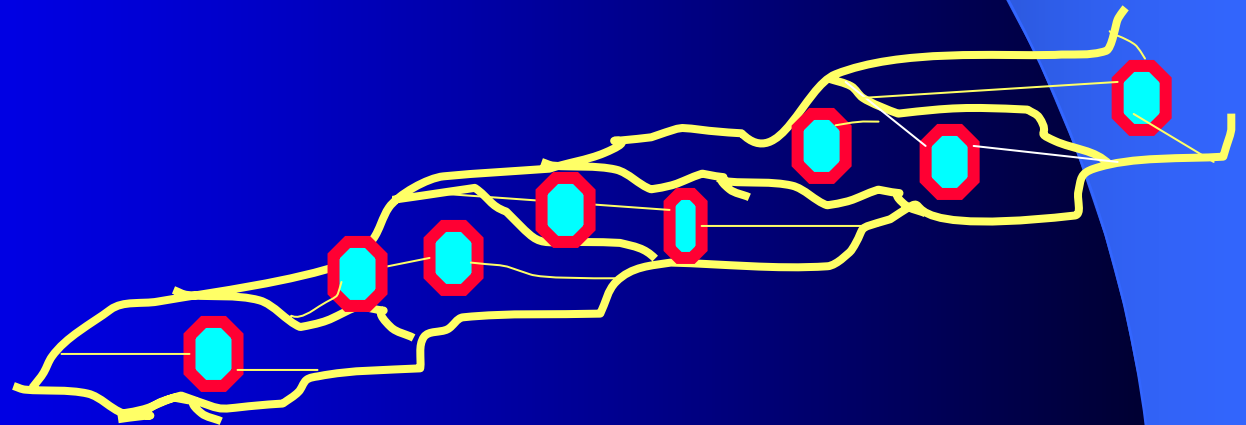


Composites

Chemically bonded mixture of organic matrix (resin) and inorganic filler



Composition

- **Organic phase - resin**

Bowen's monomer – bisphenol A a
glycidylmetacrylate– Bis GMA

Other dimetacrylate

UDMA

TEGMA

Composition

- **Inorganic phase - filler**

Milled qua

Baryumaluminium glass

Silica

Prepolymer

Composition

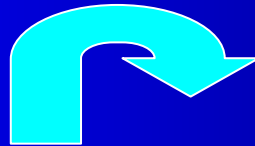
- Initiatory system
initiator a activator
- Stabilizers
- Pigments
- UV absorbers
- Antioxidants

5

Curing of composites

Polymerization

Activator



Initiator



Splitting of double bonds

Creation of the
polymer network



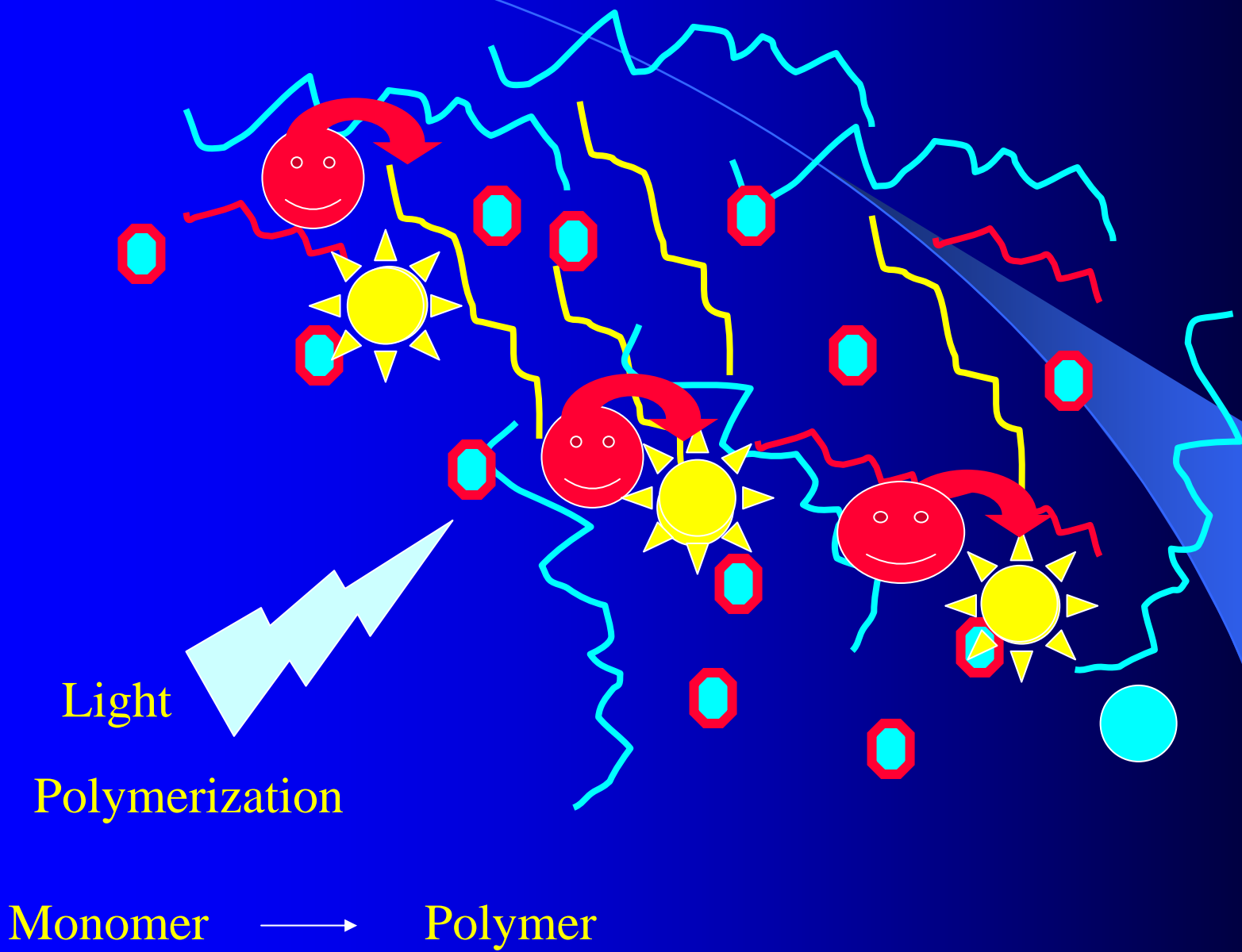
Composite according to mode of curing

☞ Chemically curing

☞ Light curing

☞ Dual curing

☞ Warm curing



Classification according to size of fillers



Macrofillers

Microfillers

Hybrid

Use of Composites

- **Aesthetic restorations**
- **- class III., IV., V., I., II.**

Bonding to the tooth structures

Enamel

Ablation of
the aprismatic enamel
Acid etching

Dentin

- o More water and organic substances
- o Low surface energy
- o Tubular liquid
- o Communication with the pulp chamber
- o Smear layer

Bonding to the tooth structures

Dentin

Removing of
the smear layer

Acid etching

Konditioner

Demineralization

Increase of the surface energy

Phosphoric acid

Primer

Opening og the collagen network of dentin

Bond

- **Penetrates into the retentive pattern in enamel and the collagen network of dentin (hybrid layer)**

Glasionomer cements

- Composition

Powder: aluminiumsilicate glass

Tekutina:

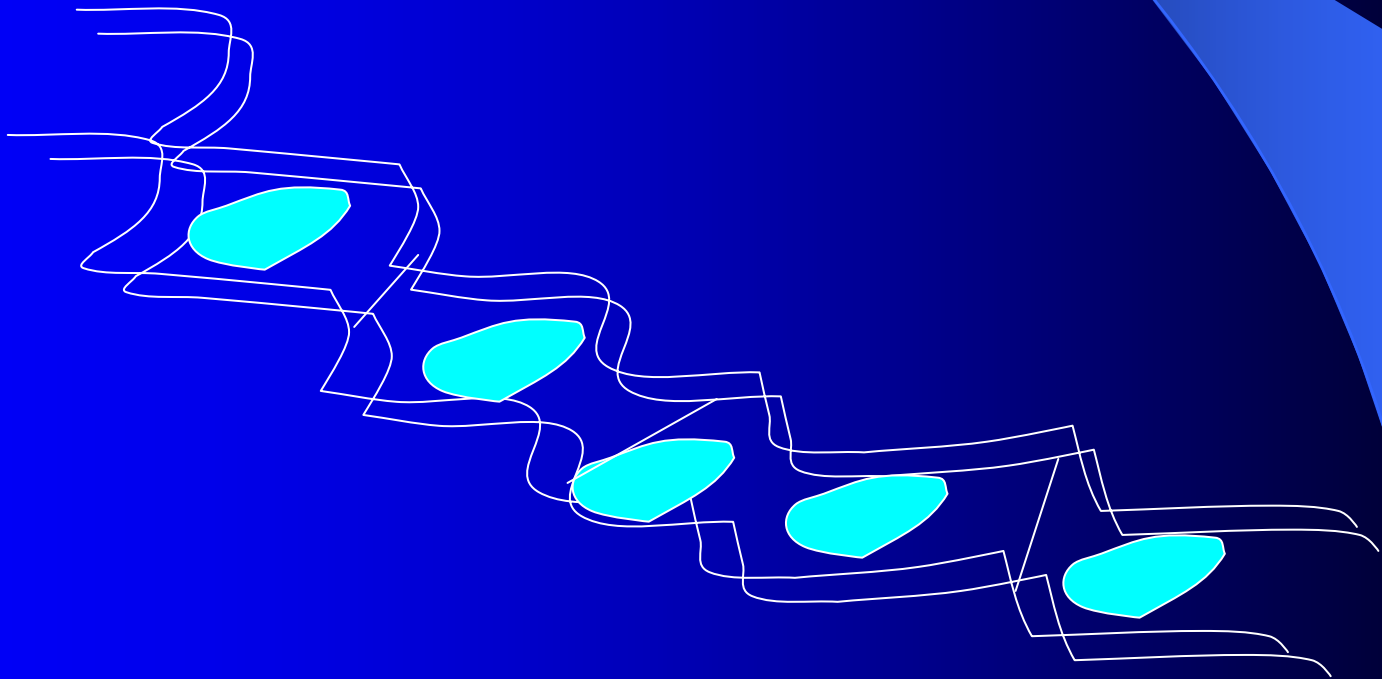
Polyacrylic acid or polymaleic acid

Tartaric acid

Water

Curing of GIC

- Aluminium calcium polyacrylate



Properties

- Chemical fixation to tooth structure
- Fluoride release
- Favorable thermal expansion
- Acceptable aesthetics

GIC according to mode of curing

- Chemically curing (acid - base reaction)
 - - conventional
 - - high strength
- Light curing (acid -base reaction + polymerization of the resin)

GIC – indication

- Class V, small class I., class III.
- Base – sandwich fillings
- Luting cements
- Root canal filling

GIC

Hand mixing

Capsulated