

RESINE TERMOINDURENTI DA OLI VEGETALI

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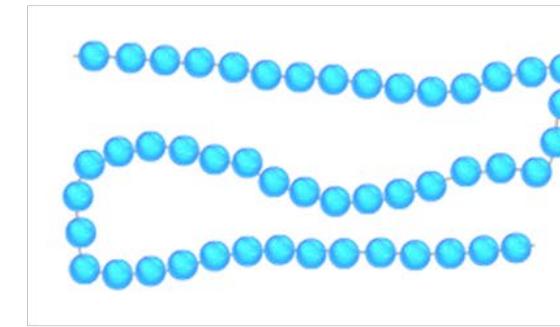
CNR-SCITEC

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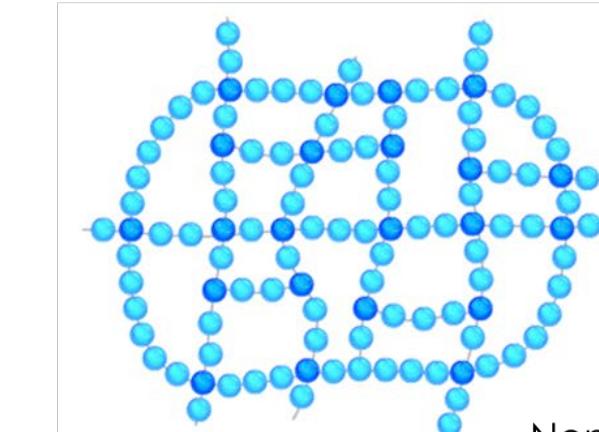
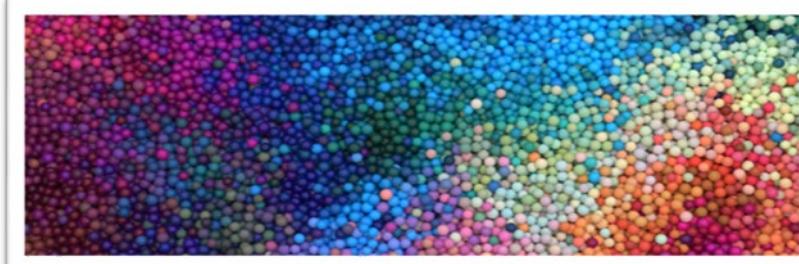
Materiali Termoplastici *vs* termoindurenti

Termoplastici



Forze deboli tra le catene polimeriche
Bassa o nulla reticolazione
Possono essere rimodellati per riscaldamento e quindi riciclati

Principali applicazioni:
Packaging
Automotive
Edilizia

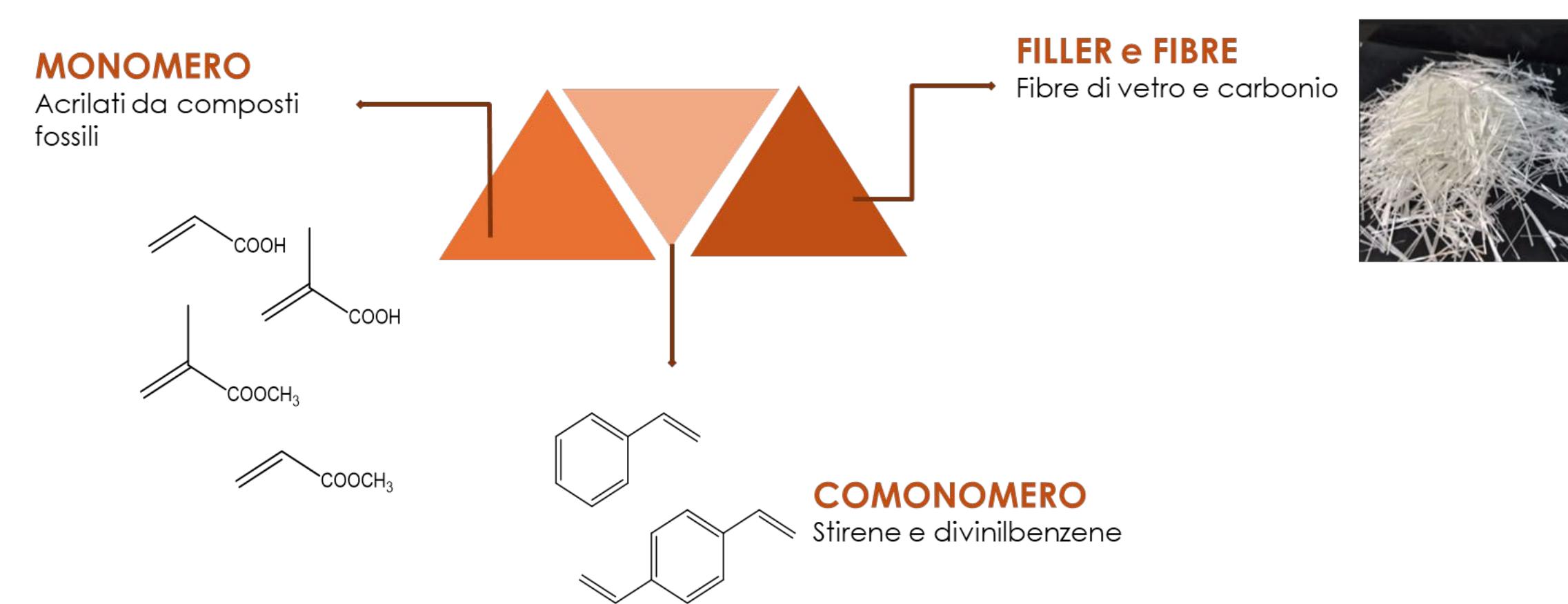


Forti legami tra le catene
Elevata reticolazione
Non possono essere rimodellati per riscaldamento

Principali applicazioni:
Edilizia (compositi)
Automotive
Rivestimenti
Design

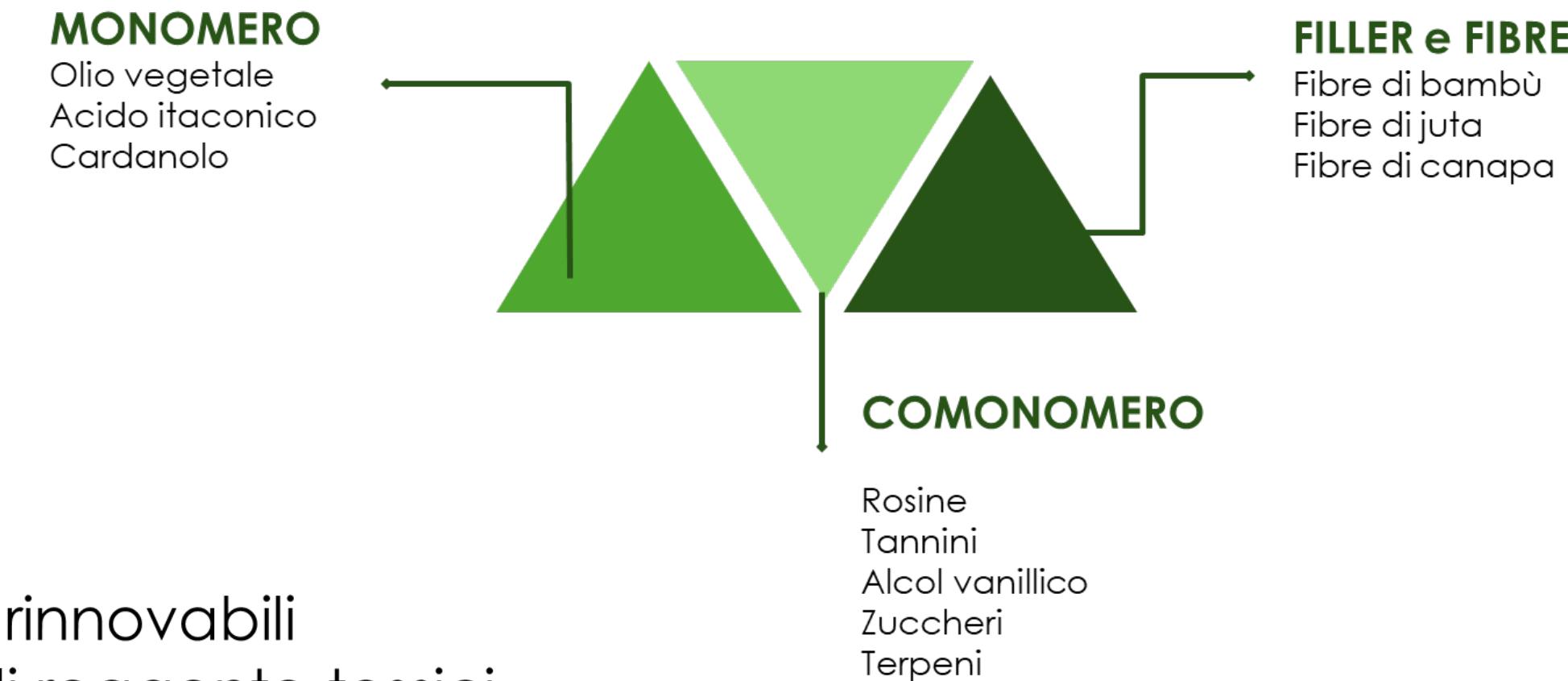


RESINE ACRILICHE E COMPOSITI TRADIZIONALI



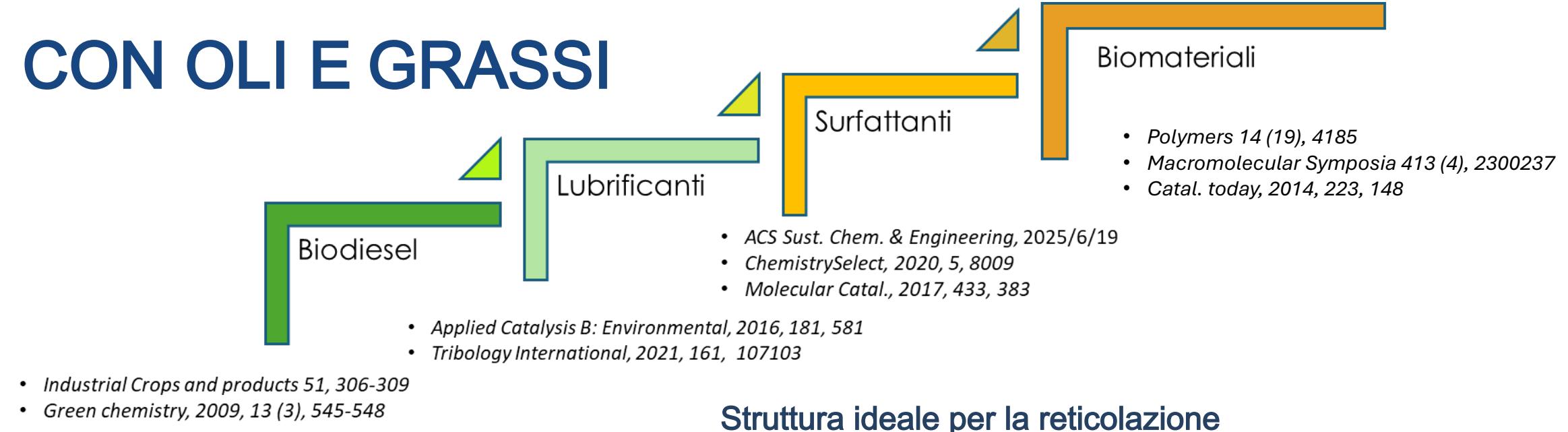
- Risorse fossili e non rinnovabili
- Materiali tossici

VERSO BIO-RESINE E BIO-COMPISITI

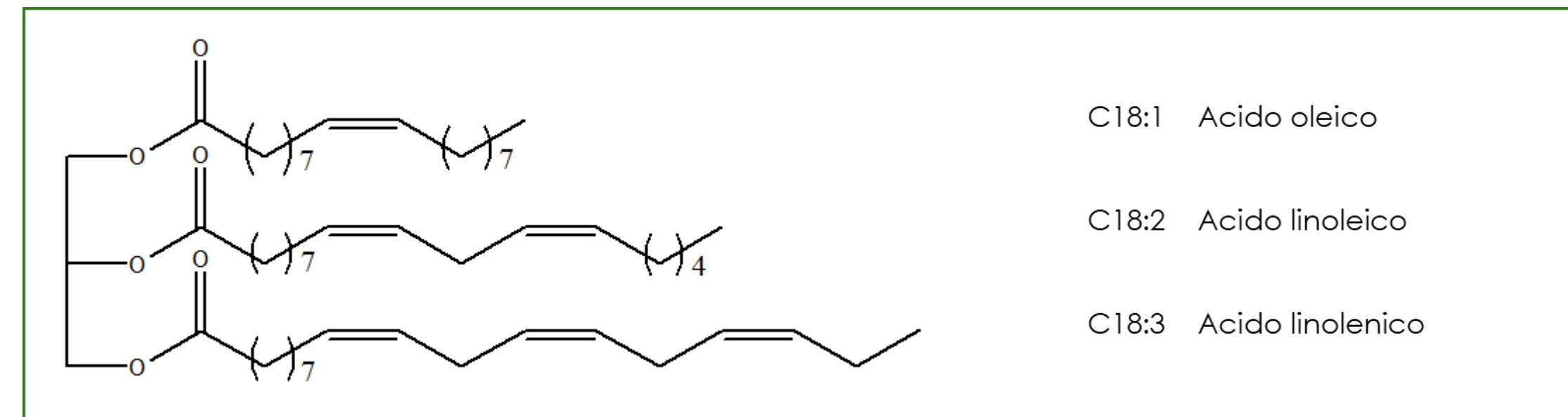


- Uso di risorse rinnovabili
- Limitazione di reagente tossici

LA NOSTRA ESPERIENZA CON OLI E GRASSI

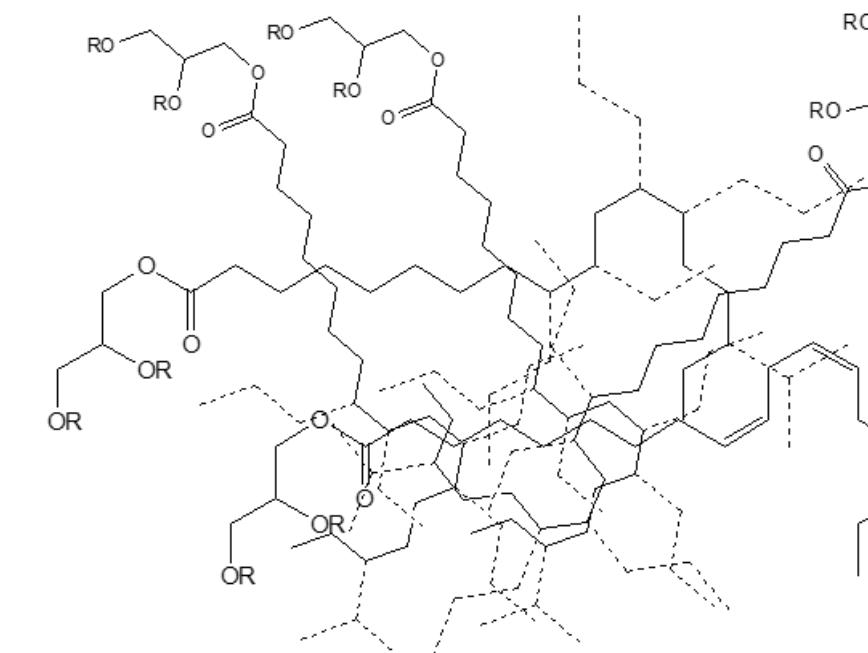
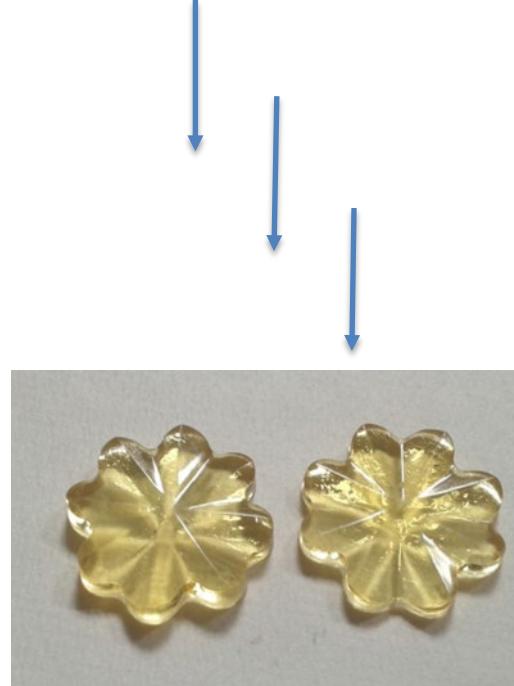


Struttura ideale per la reticolazione



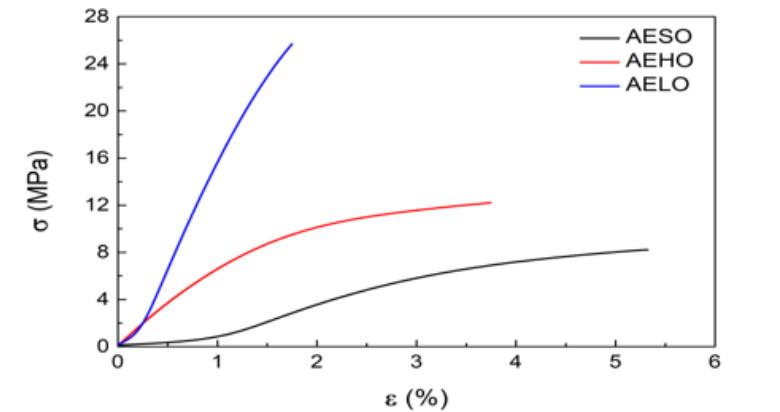
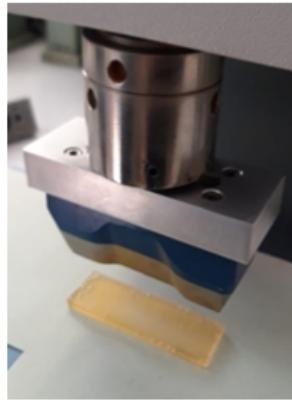
STRUTTURA E INSATURAZIONE PER I TERMOINDURENTI

	Palmitico (C16:0)	Stearico (C18:0)	Oleico (C18:1)	Linoleico (C18:2)	Linolenico (C18:3)
Olio di soia	9-13	3-5	19-30	48-53	4,5-11
Olio di canapa	5-12	1-4,5	10-16	45-65	14-30
Olio di lino	5-6	4-5	15-20	12-16	48-57

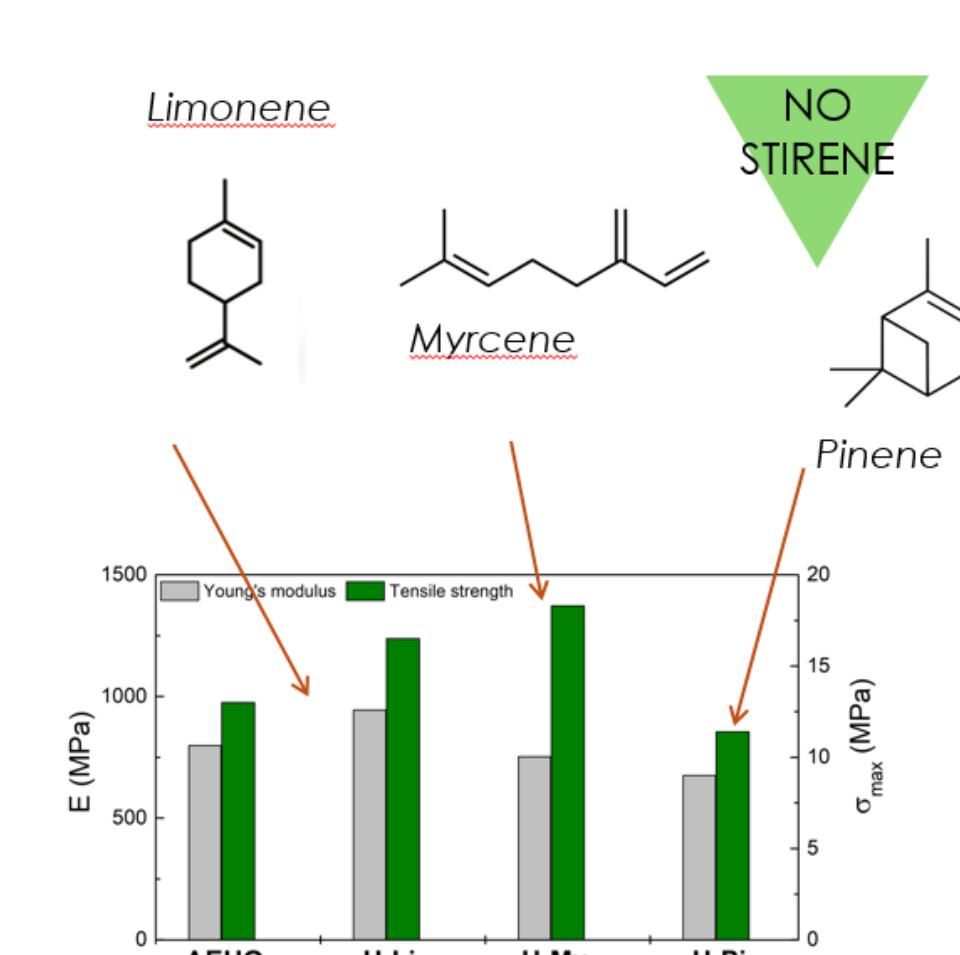
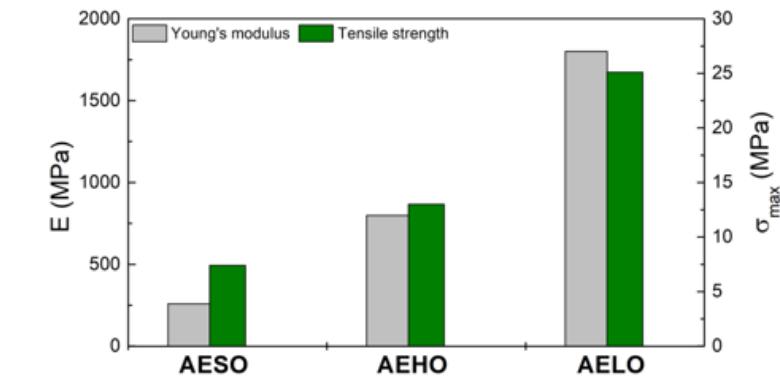


Maggiore insaturazione

INSATURAZIONI E PROPRIETÀ MECCANICHE

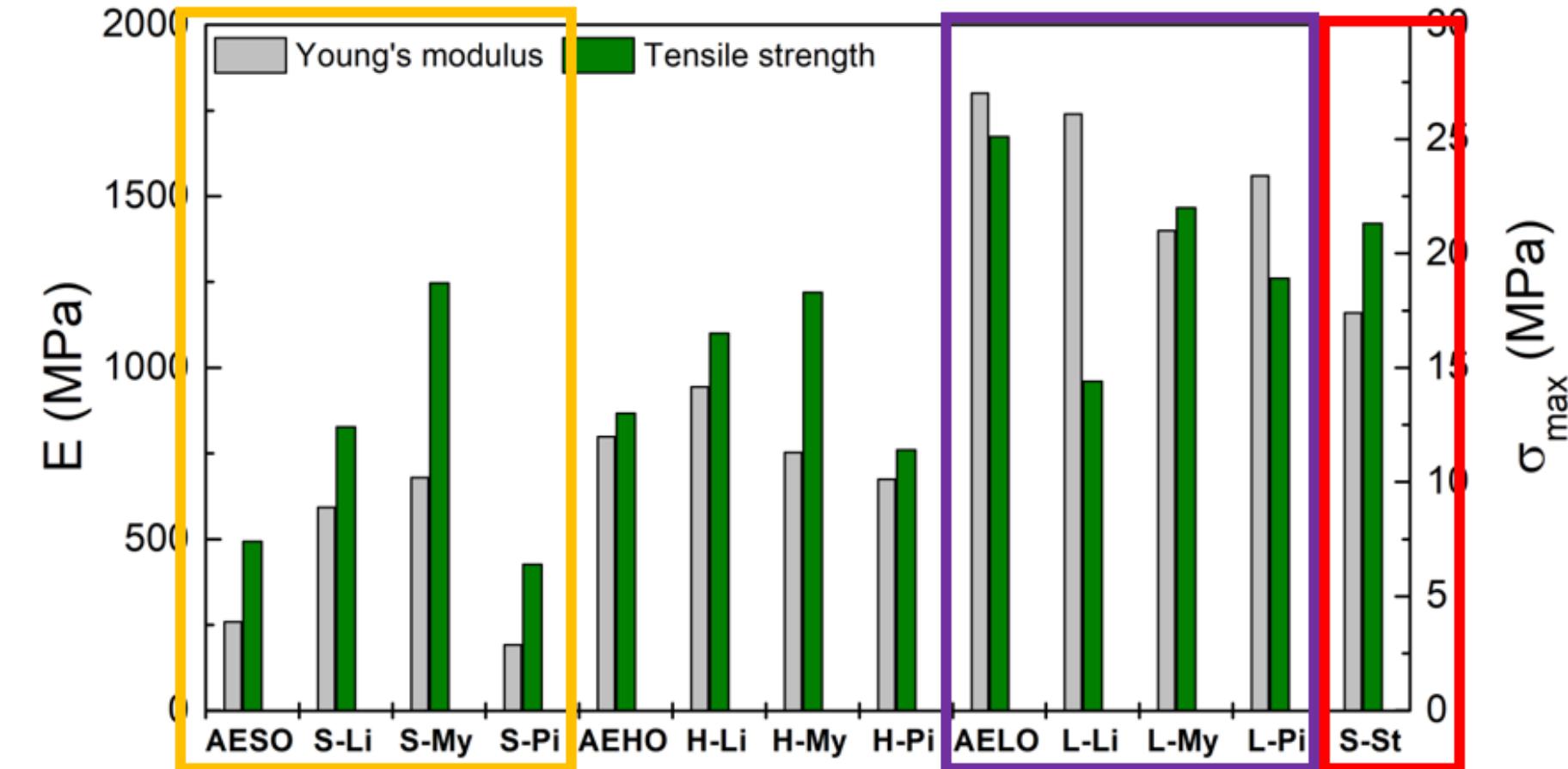


Maggiore insaturazione maggiore
resistenza



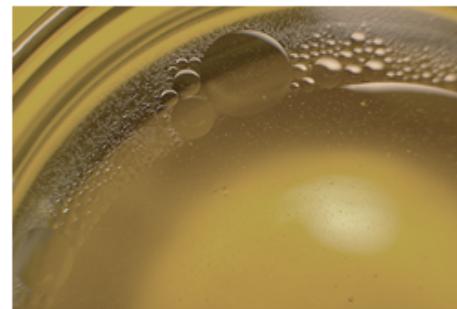
Resine termoindurenti
contenenti il 20% di terpeni

STIRENE VS STERPENE



La composizione dell'olio consente di modulare le proprietà del materiale.

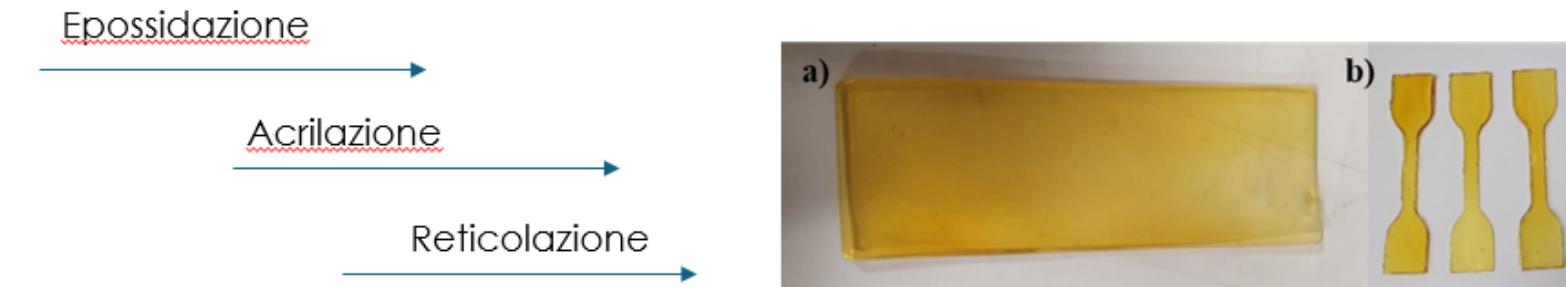
APPLICAZIONI AD OLI DI SCARTO: OLI USATI DI CUCINA



Campioni da

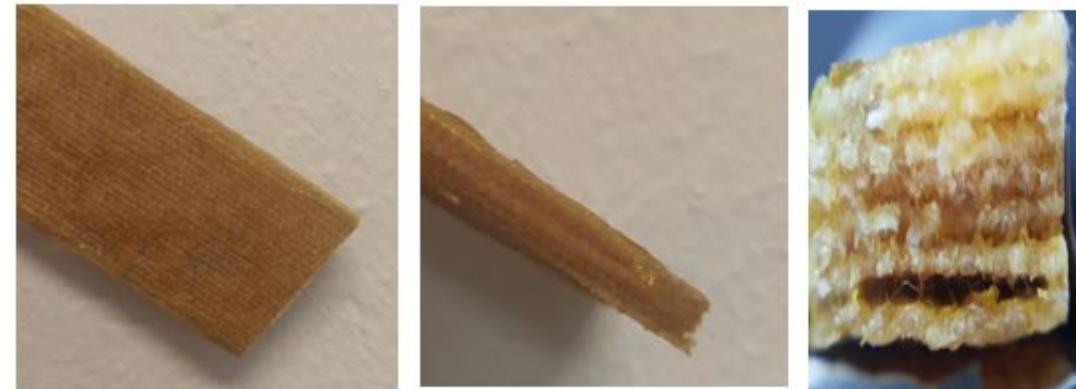


	C18:0 Stearico	C18:1 Oleico	C18:2 Linoleico	C18:3 Linolenico	Ac% FFA
Campione 1	3.66	46.44	40.02	0.70	2.27
Campione 2	3.76	45.64	39.27	0.75	1.99
Campione 3	3.34	47.50	39.40	0.72	2.65

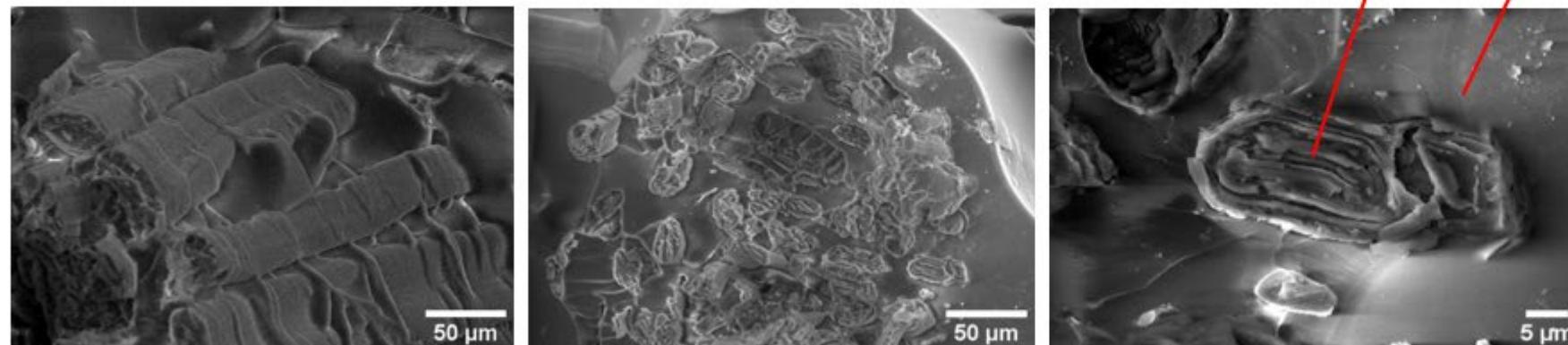


L'utilizzo di olio usato di cottura consente la preparazione di resine con le stesse performance di quelle preparate da oli vergini

COMPOSTI CON FIBRE NATURALI



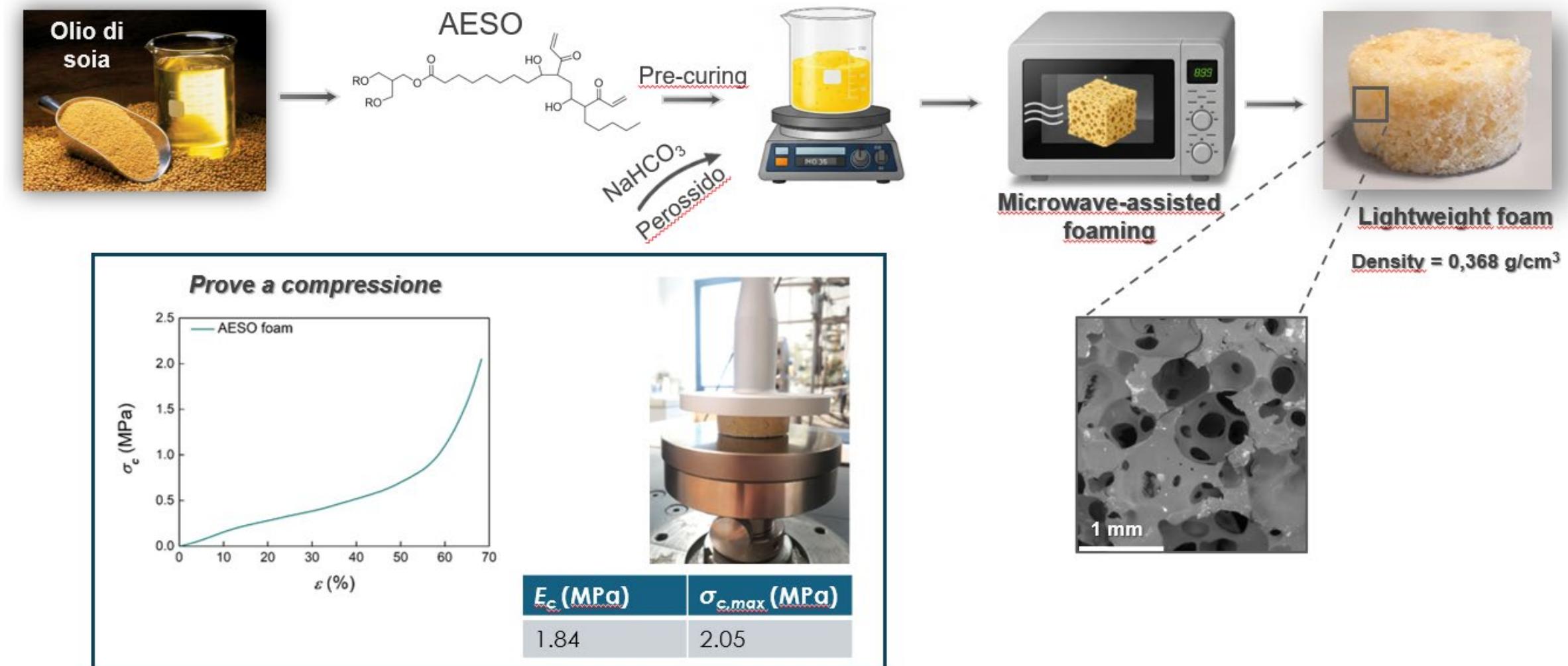
Composito multistrato: fibre di canapa con resina a base di olio di canapa e limonene

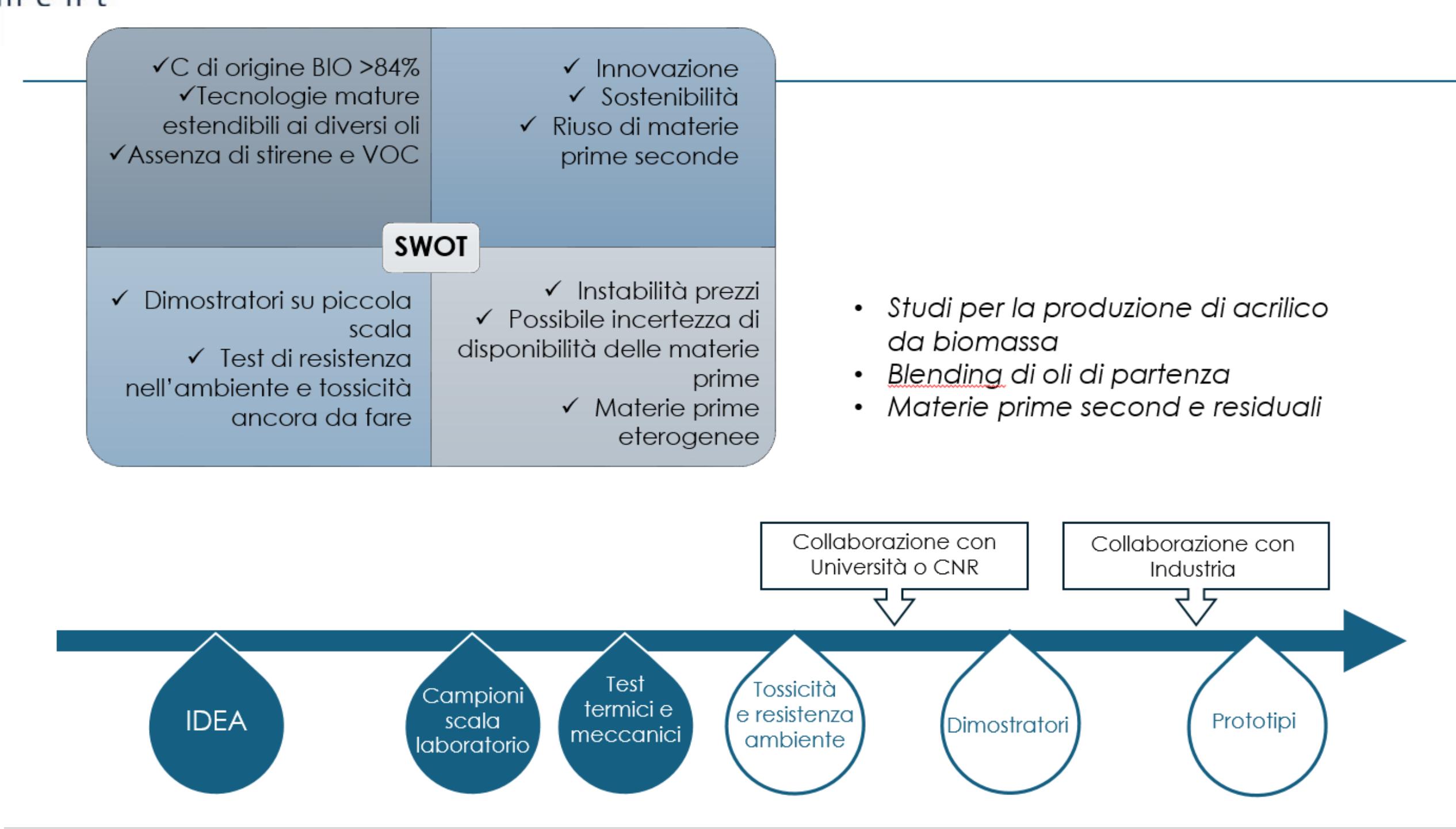


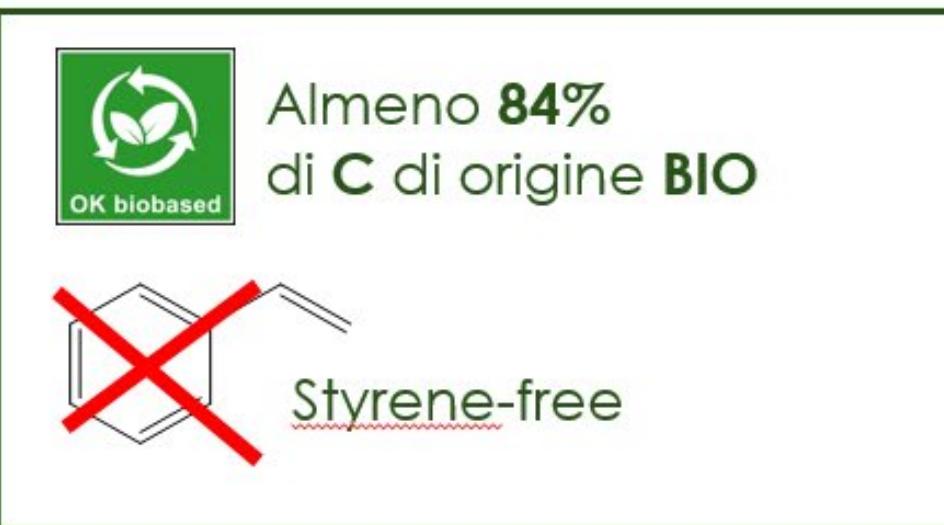
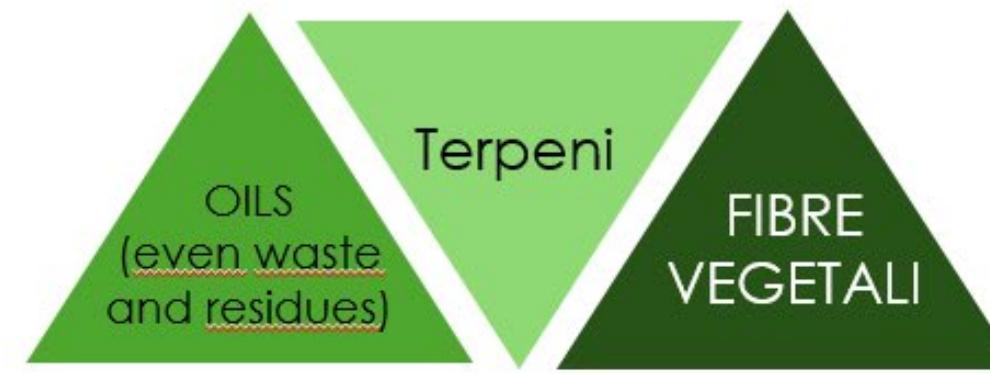
Fibra Resina

Completa adesione della resina
alla fibra senza necessità di alcun
processo di compatibilizzazione

SCHIUME A BASE DI ACRILATI DI OLIO DI SOIA







High thermal stability
Good mechanical properties
Tunable properties

Grazie!

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