Background

People love nail colors for their ability to enhance personal style, boost confidence, and add a touch of creativity to daily life. However, while the appeal of colored nails is undeniable, achieving a polished look that lasts without hassle often comes with frustrating trade-offs. Traditional nail polish requires frequent reapplication due to chipping, and removing it typically involves acetone or other harsh chemicals that can dry out and damage nails. Gel polish offers durability, lasting up to three weeks, but it requires curing under UV light and professional-grade removal, which can leave nails brittle and weakened. Peel-off polishes and base coats simplify removal but lack longevity, often lasting only a few days before peeling away on their own. Press-on nails, while convenient, may feel unnatural and improper removal can damage the natural nail surface. A nail product offering a long-lasting wear with easy peel-off removal and no potential for nail damage would allow customers to enjoy vibrant, chip-free nails for weeks without enduring the damage or inconvenience associated with traditional or gel polishes. Advances in coatings, adhesives, and polymers could enable a breakthrough solution, merging technologies from biomedical adhesives and industrial coatings to achieve the ideal balance of durability, removability, and nail health.

What we're looking for

We are seeking an innovative coating for nails that provides three-week durability, easy peel-off removal, and no damage to natural nails. We are open to collaborating with experts in materials science, polymer chemistry, or biomedical engineering to develop a viable solution.

Solutions of interest include:

- Polymer coating
- Bioadhesive-inspired nail coating
- Nanocoating for chip resistance
- Hydrogel-based nail coating
- Heat-activated peelable coating
- UV-cured flexible coating
- Smart polymers with shape memory

Our must-have requirements are:

- Three-week durability
- Easy peel-off removal without damage to natural nails

Our nice-to-have's are:

- Reusable product that could be removed and reapplied

What's out of scope:

- Solutions using hazardous substances or harsh chemicals harmful to nails or skin

Acceptable technology readiness levels (TRL): Levels 5-9

1. Basic principles observed
2. Concept development
3. Experimental proof of concept
4. Validated in lab conditions
5. Validated in relevant environment
6. Demonstrated in relevant environment
7. Regulatory approval
8. Product in production
9. Product in market

What we can offer you

Eligible partnership models:

Material transfer

Benefits:

Expertise

Partners will have access to industry experts in chemistry and toxicology, depending on the stage of the project. Partners will also receive guidance on industry best practices and techniques.

Please contact the University of South Florida Technology Transfer office representative for submission – Karla Schramm at kschramm@usf.edu