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**Battelle Number(s):**

15596-E

Patent(s) Issued

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# Selective Immobilization of Macromolecules on Self-Assembled Monolayer Surfaces via Reactive Landing

## SUMMARY

Soft landing is a technique for directly depositing intact projectile ions produced, transmitted and separated by a mass spectrometer onto surfaces, with or without the retention of initial charge. If a suitable surface is selected, the ions deposited on the surface may covalently link to the surface and be retained for further analysis. Novel developments at PNNL have demonstrated the direct binding of gas-phase macromolecules (e.g. peptides) on self-assembled monolayer surfaces. These macromolecules can then be retained for further use and analysis. The bonding strengths of some macromolecules are such that they can be retained for long periods of time on the surface in ambient conditions. High selectivity and specificity inherent to mass spectrometry and ion beam chemistry provide unprecedented control for preparation of novel substrates using soft-landing of mass-selected ions. Further development of soft and reactive landing should provide new applications for mass spectrometers as a preparatory tool for biological samples.

### Patents & Intellectual Property

- » Patent #: 8,067,053

### Technology Portfolio(s)

- » Mass Spectrometry Instrumentation

### Potential Industry Applications

- » Chemicals
- » Healthcare, Pharma, Biotech & Medical
- » Professional Services
- » Security

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