Electronic Supplementary Material (ESI) for Analytical Methods.

Supporting Information

Matrix-Enhanced Nanostructure Initiator Mass Spectrometry (ME-NIMS) for Small Molecule Detection and Imaging

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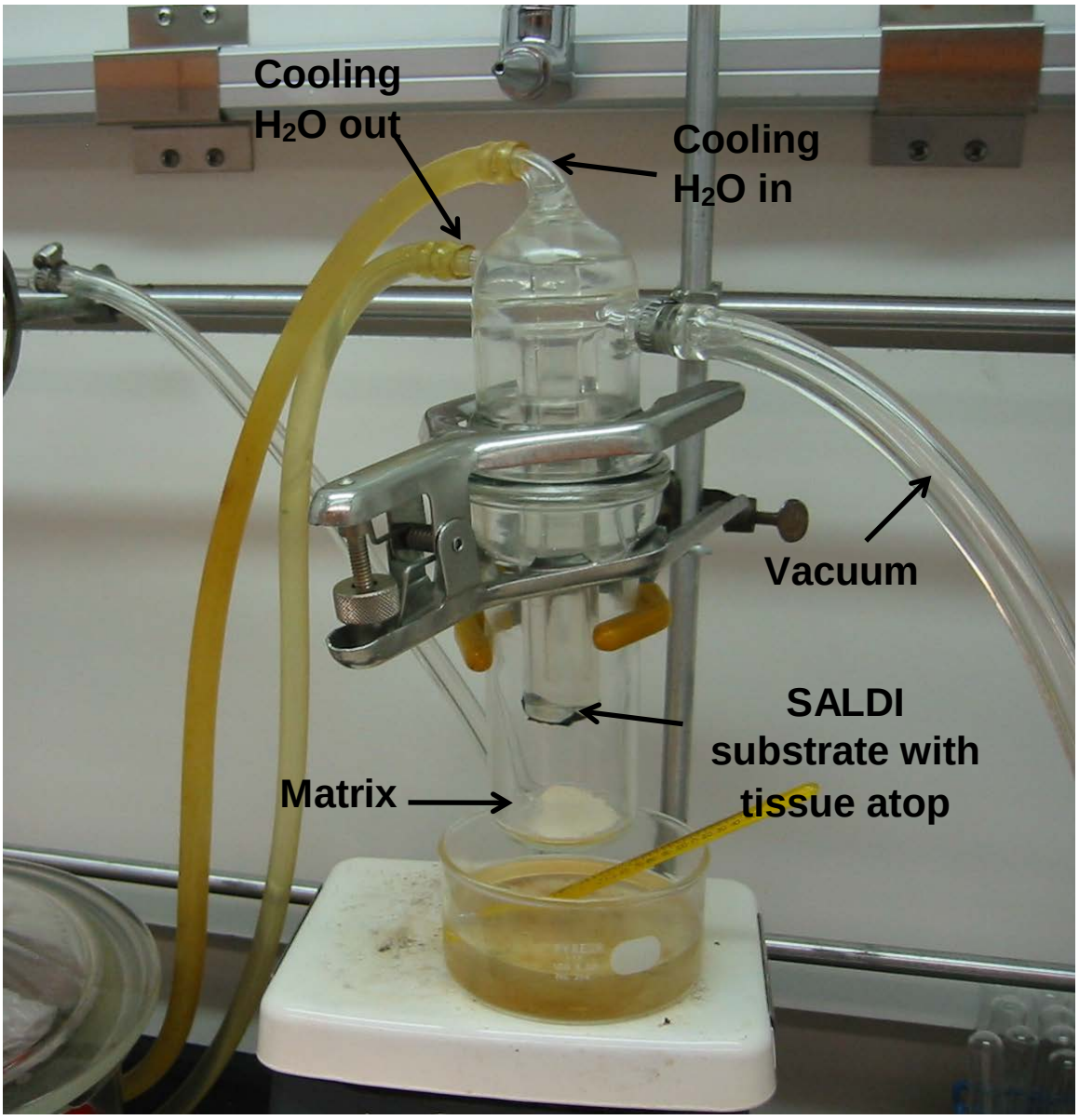
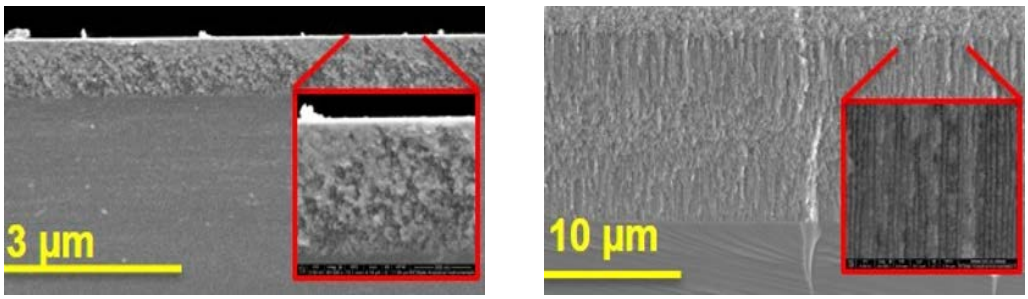
Supporting Information Table S1: A Summary of Experiment Conditions for NIMS, ME-SALDI, and ME-NIMS substrates.

	NIMS		**ME-SALDI**		**ME-NIMS**	
	n-type	**p-type**	**n-type**	**p-type**	**n-type**	**p-type**
Piranha clean	✓	✓	✓	✓	✓	✓
5% HF wash	×	×	×	×	×	×
Etch time (min)	30	30	30	30	30	30
Current density (mA/cm^2)	32	48	32	48	32	48
Matrix sublimation (min)	×	×	1.5	1.5	1.5	1.5
Initiator application (min)	30	30	30	30	×	×
Storage	air		ethanol*		ethanol*	

*Prior to matrix deposition, ME-SALDI or ME-NIMS substrates are stored in ethanol to avoid surface oxidation. After sublimation, substrates are immediately analyzed in the instrument.



Supporting Information Figure 1: A photo picture of in-house sublimation apparatus.[24]



Supporting Information Figure 2: SEM images of cross-sections of SALDI (left) and NIMS (right). Insets display a zoomed in view of the porous channels. Closely packed high-aspect ratio pores are clearly seen in NIMS whereas the pores in SALDI (i.e. DIOS) are much more random and loosely packed.