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Supplementary Material

Detecting and discriminating pyrethroids with chemiresistor sensors

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Table S1. Countries that require disinsection as of February 2019 (United States Department of Transportation 2017)

Country	Method			Flight From/On
	Spray with passengers	Residual	spray with no passengers	
Ecuador (only Interislands)	X			All countries
Grenada	X			All countries
Guyana	X			All countries
India	X			All countries
Kiribati	X			All countries
Madagascar	X			All countries
Panama	X			All countries
Seychelles	X			All countries
Tanzania	X			All countries
Timor-Leste	X			All countries
Trinidad and Tobago	X			All countries
Uruguay	X			All countries
Zimbabwe	X			All countries
Australia	X	X	X	All countries
Barbados	X	X	X	All countries
Chile	X	X	X	All countries
Cook Islands	X	X	X	All countries
Fiji	X	X	X	All countries
Jamaica	X	X	X	All countries
New Zealand	X	X	X	All countries
Czech Republic	X	X	X	Areas of contagious diseases
Egypt	X	X	X	Zika-infected countries
France	X	X	X	Areas of malaria, yellow fever and dengue fever
Hong Kong	X	X	X	All incoming aircraft from Zika-affected countries designated as WHO Category 1 or Category 2
Indonesia	X	X	X	Infected areas
Italy	X	X	X	All aircraft coming from areas affected by Zika virus transmission and areas where the *Aedes aegypti*carrier is present
Mauritius	X	X	X	Generally, flights coming from African continent, Asia and sub regions, the Middle East and islands of the Indian Ocean, and flights coming from any other country where mosquito borne diseases are prevalent.
Macau	X	X	X	Flights from major infectious disease/Zika-infected countries
Palau	X	X	X	Non-US carriers from Korea, Hong Kong, Macau and Thailand
Peru	X	X	X	Some in-country flights
Republic of Korea	X	X	X	30 countries, not including the United States
South Africa	X	X	X	Areas of malaria or yellow fever
Switzerland	X	X	X	Intertropical Africa
Taiwan	X	X	X	Incoming flights from areas with arbovirus vectors *Aedes aegypti* and *Ae. albopictus*
Thailand	X	X	X	Areas of yellow fever
United Kingdom	X	X	X	Malarial countries and countries with confirmed transmission of Zika (Voluntary)

Table S2. Average resistance of gold nanoparticle films on microelectrode sensors functionalised with different thiol compounds, measured while immersed in water.

Code	Functionalising chemical	Average Resistance (Ohms)	Standard Deviation (Ohms)	Number of Sensors (N)
HEX	1-hexanethiol	70,000	11,886	15
MHOH	mercaptohexanol	212,500	101,993	8
4-MPBA	4-mercaptophenylboronic acid	10,638	4,893	8
MOB	4-methoxybenzylmercaptan	21,500	14,243	6
1-HEPTT	1-heptanethiol	150,543	53,185	7
1-10-DDT	1,10-decanedithiol	39,613	6,185	8
NT	2-naphthalenethiol	10,225	3,380	8